

THE PRACTICAL
JUNIOR TEACHER



COLOUR PROJECTS CARRIED OUT BY JUNIORS

1. Actors for the Model Theatre. 2. Paper-knives. 3. Papier Mâché Tray. 4. Serviette Rings (glued paper)

(L. 3665)

Frontispiece

THE PRACTICAL JUNIOR TEACHER

*A Guide to the Most Modern Methods of Teaching Children in
the Junior Schools*

Edited by F. F. POTTER, C.B.E., M.A., B.Sc.

*Lately Director of Education for the County of Cheshire, formerly H M Inspector of Schools
Author of "Common-sense English," "Common-sense Arithmetic," etc*

Associate Editor: G. M. PLACE

*Contributions by Leading Authorities in Every Branch of Junior Education,
with Numerous Illustrations, Schemes of Work, and Practical Suggestions*

VOLUME IV

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COLOUR TRAINING

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CHARTS WITH THIS VOLUME

COLOUR WHEEL (IN COLOUR)
 WRITING
 PATTERN MAKING
 "HOW TO USE YOUR TOOLS" (2)
 HISTORY TIME CHARTS (2)



COLOUR TRAINING

"It is generally agreed that all children should feel and recognize the joy of colour, and the pleasure of rhythm and harmonious pattern . . . all branches even of elementary art are connected in a very subtle way"—REPORT ON THE PRIMARY SCHOOL, 1931

"ART . . . is not a mechanical trade," says Sir Joshua Reynolds in his seventh discourse, and one might add that all the difficulties which confront the teacher—particularly the teacher of many subjects—arise from this fact. He may endeavour to treat Art like arithmetic, trying to work out a progression of steps in logical sequence, and, failing to do so, blame his want of a more profound knowledge of his subject. Were he fortunate enough to have many artist friends, he would soon find that the more able those friends were, the less prepared they would be to say anything positive about Art, and the more difficult it would be for him to reduce anything they said about their work to a teachable rule.

The truth is that Art is a language appealing direct to the emotions and losing, when expressed in words, in much the same way as a foreign literature loses in translation, so that if the reader is expecting in this chapter on "Colour Training" a course of lessons in logical sequence, he will be disappointed, because it is not in the nature of the subject to be treated so mechanically. A wise teacher will rejoice in this, glad of the opportunity of showing his pupils that there is "sense" as well as "reason" in life. The realm of "sense" or "feeling" is the realm of the artist.

Man possesses a colour sense. In its rudimen-

tary and physical form, this sense is the power to distinguish variations in the frequency of light vibrations—i.e. different colours; but such is our nature that colours have different effects on our emotional being, particularly when in combination. Some arrangements of colour will produce irritation, while others give pleasure.

All people are, more or less, affected by colour, and it is the object of colour training to make the pupil more sensitive to the effects of colour. This colour training will have two main aspects: one in the distinguishing of colour values, the other in sensing the emotional effect of colour.

Critics of Art know how rare fine colourists are, and when one considers what a small margin there is between good and poor colour, this can readily be understood. To make the point clear, let us consider the work of the colour printer in the three-colour process. By this process pictures are printed from three blocks, which must register exactly. If the register is correct, the print is surprisingly good, but one in which the error can be detected only with a lens has nothing like the fineness of colour value of the exact print, also, if the ink of one of the colours is not quite right in tone or tint, the reproduction is bound to suffer.

A comparison of a reproduction with an original will often show clearly the smallness of the margin that makes really good colour. What

makes the fine colourist is this sensitiveness to small differences of colour value. To him the world is full of colour, his eye being able to detect colour—that is usually passed by—in the dullest and greyest of things.

Hence the importance of colour training, for even if the child is not ultimately employed in some business where colour plays a part, the lack of a good colour sense means that many of the beauties of the world must remain concealed. To awaken the child to the infinite beauty of colour in nature and the beauty of colour in pictures, and to give some power in the making of beautiful or expressive colour arrangements, is the aim of colour training.

In this chapter suggestions are given for some ways in which this may be attempted, but it is not a mechanical business, and hard and fast rules should not be sought. What we have to do is to supply mental food and exercise, and to watch growth, and not be too dogmatic as to the lines which that growth must follow. There are many types of good colourists, even among artists. As stated in the Board of Education's report on *The Primary School*—

The curriculum is to be thought of in terms of activity and experience rather than knowledge to be acquired and facts stored.

What Colours do Children Prefer?

It is often stated that young children like bright colours. The reason for this may be that bright colours have greater power to stimulate the optical nerves, and this preference, therefore, argues a lack of sensitiveness for less positive colour. One must not, however, conclude that all children lack power to appreciate subtle colour values. Children have been known to prefer delicate to bright colour, even at the age of 4 or 5. It therefore becomes the duty of the teacher to supply material for all tastes. If only bright colours are supplied or dealt with, permanent damage may be done to those who have a sense for delicate colour; and if subdued colours are insisted upon, those who really prefer bright colours will become hypocrites and not develop. They will use the colours teacher likes, and not those they prefer themselves.

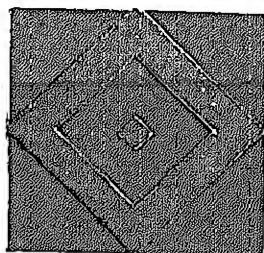
Experiments in Colour Preference. In connec-

tion with colour preference the following experiment was tried. A simple pattern, a square inside a square, repeated six times (Plate I) was painted with the crudest red and green that could be found. No. 1 was left untouched. No. 2 was given a wash of gamboge; No. 3 a wash of the red, No. 4 a wash of the green; No. 5 a wash of cobalt blue; and No. 6 a wash of grey (black watered down). These patterns were numbered and pinned on to a large sheet of white paper. Children of different ages (ranging from 7 to 17 and from various classes) were asked to look at them and write down the order in which they preferred them. It is significant that no boy put No. 1 first, that there was a large percentage preferring No. 2, and that, particularly among the youngest, Nos. 4 and 5 were favourites. Among the oldest pupils, some preferred No. 6. A few said they did not like any of them.

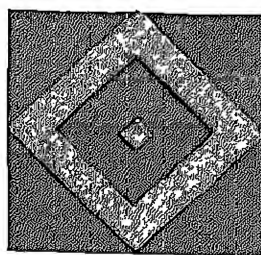
The first thing concluded from this experiment was that pupils have decided preferences; the second, that they prefer those arrangements in which the colours have a common note mixed with each colour of the scheme.

This is something for the teacher to remember rather than to teach, for it is not a fool-proof rule (all rules in art teaching tend to become crutches that make cripples), but rather a fact useful in making suggestions for experiment. For instance, a pupil produces a scheme in which there is one colour terribly out of harmony with the rest. A wise teacher will not say that the colour is wrong, but will give a suggestion to be tried, and leave the child to make another decision. The nearer the suggestion to the original idea, the better. Choosing another colour from the scheme, suggest that a small quantity of it be mixed with the offending colour. This should be done on a scrap of paper cut or torn to shape so that it can be placed over the colour in question, in order that the result can be compared fairly with the original scheme. More often than not, the suggestion will be recognized as better. You will thus have made the pupil exercise his colour sense, and impressed him with the value of experiment.

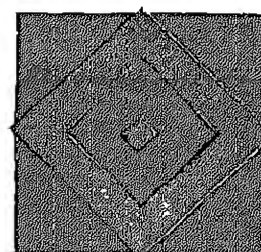
This method of suggestion and experiment should be adopted throughout. Colours are too easily spoiled to be dealt with by confidence-



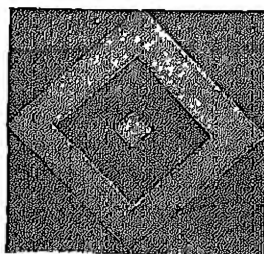
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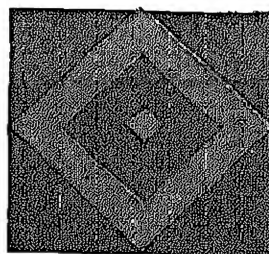
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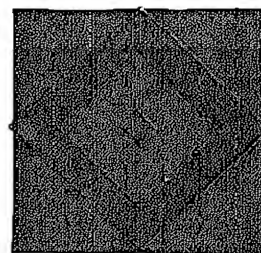
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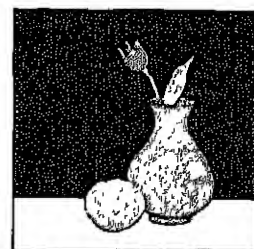
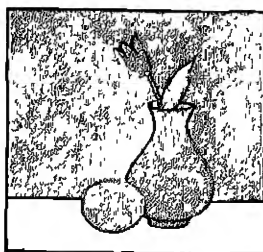
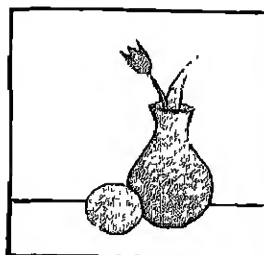
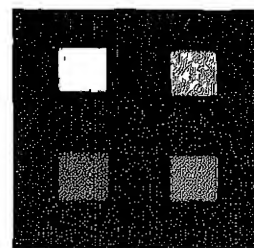
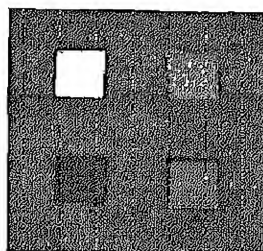
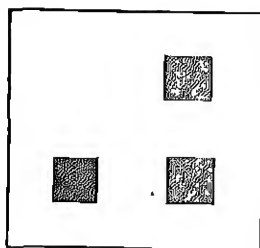


PLATE I COLOUR SCHMES

Above 6 variations of a colour scheme
Below 3 pairs of examples showing influence of backgrounds on colour

(1: 3665)

giving rules. Sensitive observation is the only thing which can succeed in every case.

The foregoing method of alteration of a scheme is valuable when colours are on the bright side, but sometimes colours are on the dull and gloomy side. Perhaps they have come so accidentally, and the child, having fulfilled the letter of your demand for a scheme of colour, waives his own preference. In such a case, suggest a small quantity of a really bright colour as an outline or as a minor feature of the design, and insist on a preference.

Other schemes will seem to fail because of too great a difference of tone. There needs to be a unity of tone as well as of colour. The obvious remedy in this case is a suggested alteration in tone. At other times too many colours will have been used, and the omission of offending colours will bring improvement.

If the child has experimented with your suggestions and rejects them, and you feel satisfied that he honestly prefers his original scheme, and time does not allow of further experiment, then the original scheme must remain in the work. Such children are often interesting to study. They may merely be retarded children, or they may be children with an original outlook from whose natural development a teacher will find there is something to learn. Your work in the lesson is not to make every child produce something which an Art critic will call good, but to see that each one is exercising his mind in the study of colour.

Pattern Making

Doubtless some may wonder at these statements and ask how it is proposed to bring in this use of colour schemes. If the syllabus is limited to nature and object drawing, this query is easily understood. It is difficult to get a thorough colour training from imitative work alone.

The finest scope for colour is in pattern making and its use in craft or handwork. The term *design* is intentionally avoided here. Design is a much greater thing, involving deliberate making and planning, structure, as well as decoration. Pattern making is experimenting with forms and colours. Children, like all primitive peoples, love pattern. It is a realm of creation and discovery to them, and should

be included in the syllabus. The following scheme for the preparation of a pattern makes use of the same materials as the first lesson of the design work.

Many teachers find that children take to pattern making. The work is easy, and the child goes into the more pattern making with a new interest and shapes without much suggestion. The reason for this is because the child is given a definite form to work on. In making of patterns, only two things should be given to the child: a definite basis and a definite character. The character should be built up. If the character is not built up, the child will never be able to make a pattern. The teacher should keep the pattern within the child's imagination and give it individuality and interest. When the child has completed the pattern, the teacher should be able to explain the character of the pattern. The child can gain experience from the pattern. The teacher should encourage the child to make a pattern of his own.

Pattern Exercise. For the first lesson of the pattern making, the teacher should give the child a definite form to work on. The teacher should keep the pattern within the child's imagination and give it individuality and interest. When the child has completed the pattern, the teacher should be able to explain the character of the pattern. The child can gain experience from the pattern. The teacher should encourage the child to make a pattern of his own.

In the first lesson of the pattern making, the teacher should give the child a definite form to work on. The teacher should keep the pattern within the child's imagination and give it individuality and interest. When the child has completed the pattern, the teacher should be able to explain the character of the pattern. The child can gain experience from the pattern. The teacher should encourage the child to make a pattern of his own.

The above pattern is a simple one, and can be made by a child of any age. It is a good example of a pattern which can be made by a child of any age.

At once it will be seen that the pattern is a simple one, and can be made by a child of any age. It is a good example of a pattern which can be made by a child of any age.

the sections on Illuminating and Lettering, Rug-making, Bookbinding, Raffia, Stencilling, etc.

The scale of the pattern will always be determined by the material employed.

The second pattern idea given can be developed into patterns which are very valuable for experiments with two colours. Many ingenious patterns can be built on this basis.

The third example, like the others, has a very wide range of application. Of course, in any one lesson, only one or two *motifs* should be given, as too wide a range of choice leads to confused work. In all these methods patterns for simple geometric spaces and borders, as well as "all-over" patterns, can be developed.

The fourth suggestion produces wonderful lace-like patterns, and the fifth—a very much harder exercise—gives fine scope for ingenuity.

These five suggestions, of course, by no means exhaust the subject, but in them may be found the material for many a lesson, and working from them the teacher will be able to analyse patterns and build up a set of instructions for starting points from which the class can work.

There is no need to fear bad results with pattern making of the kind indicated. It is so deep rooted in human nature that the children will not want to leave the pattern lesson, and, if rightly taught, will despise using other people's inventions and delight in originality.

One word of warning. Keep away from realistic forms. These patterns are not meant to be an imitation of nature, and the introduction of natural forms confuses the issue. The mind hesitates between likeness to nature and rhythmic arrangement of form and colour. Natural forms may be introduced through a craft, and will be modified or conventionalized to suit the tools of that craft. They must always be considered primarily as decorations.

Space will not allow of a fuller treatment of pattern making, but further useful information can be obtained from *Pattern and Design*, by R. Heywood (Pitman), *Applied Arts and Crafts*, Junior Series (New Era Publishing Co., Ltd.); See also The P.J.T. Pattern Chart.

Colour Media

The chief colour media suitable for use in Junior Schools are pastel, water-colour, coloured

papers, raffia and wools. To these can be added poster colours, although the difficulty of their distribution in a large class is against their use.

Variety to the lessons should be given by the use of different media. Each has colour qualities of its own, and can assist in widening the child's experience of colour.

Pattern work can be done in all media, although pastel is the least suitable or useful for this purpose, but with the youngest children (7 and 8) it is easier to manage than water-colour.

At this stage colour papers are very valuable, although the range of colours usually supplied in packets is too limited. A much larger range of over 30 shades is made by some firms, and the range can be augmented by making use of pastel papers, self-toned wall-papers, and even wrapper paper. These can be pinned out and given a coat of gum on one side so as to dispense with the use of paste. Arrangements must always be made for the free selection of colours, and the children encouraged to make the colours look well together. A good plan is for the children to work in groups with a varied supply of colours to each group.

Experimenting with different colours on the same picture or pattern should be stimulated, and in all experiments the pupil should make the decision as to which is the most satisfactory.

In all colour exercises it may be wise at times to limit the number of colours used as a disciplinary measure, because, if a child cannot choose two colours to go well together, he is not likely to be able to choose three, but it should always be borne in mind that over-restraint may produce lifeless work. Sometimes an imposed colour condition is useful to keep the work in order, such as, say, the use of black or grey, as part of the scheme. Children seldom choose such colours naturally, and consequently never discover how such neutral tones can enhance the value of other colours.

Colour Distribution and Balance

If finely coloured pictures or patterns are analysed, it will be found that each colour is well distributed and balanced throughout. For instance, in the picture of "Two Girls" by Skigemas (the original of which is in the British

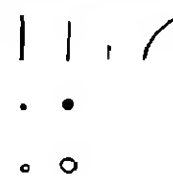
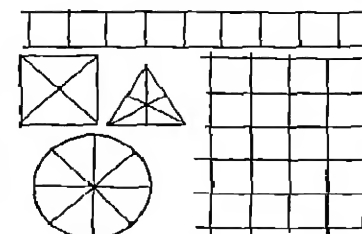
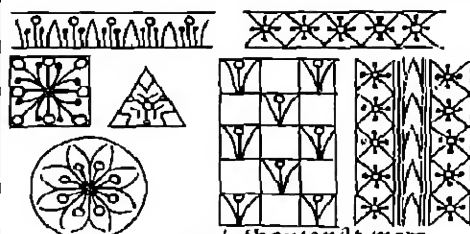
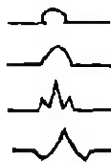
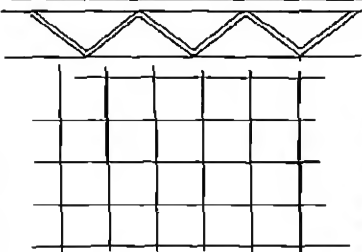
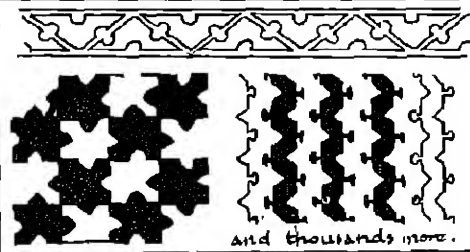
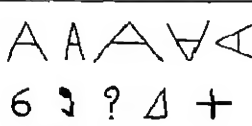
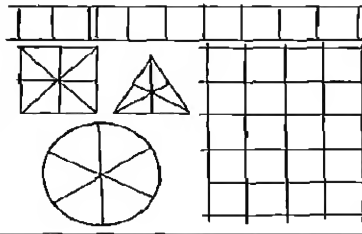
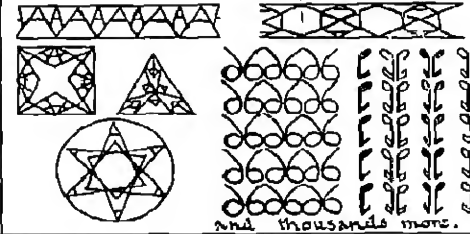
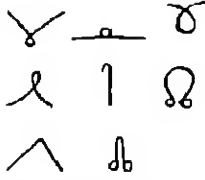
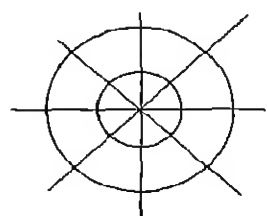
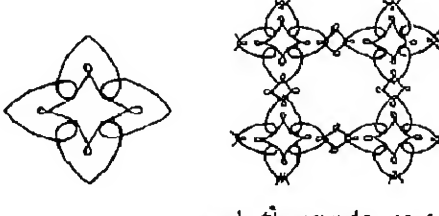
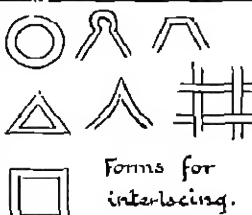
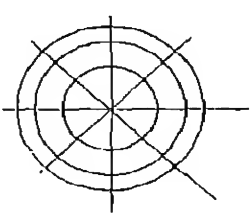
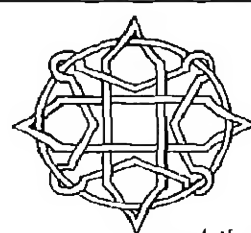
Motifs given.	Construction given.	Patterns evolved.
<p>Lines & Dots</p> 		 <p>and thousands more.</p>
<p>Bent Lines</p> 		 <p>and thousands more.</p>
<p>  Letters signs or geometric figures. </p>		 <p>and thousands more.</p>
<p>  Shorthand or similar forms. </p>		 <p>and thousands more.</p>
<p>  Forms for interlacing. </p>		 <p>and thousands more.</p>

FIG I
Evolution of Patterns

Museum), reproduced on Plate II, the red of the sash on one of the figures is repeated in the hem and around the neck of the other figure, while the grey of the second girl's kimono is echoed in the hem and neck of the first girl's garments. The yellow, too, is woven throughout the two figures, while the black hair of the one is nicely balanced by the not quite so intense hair of the other. Is this arrangement deliberate? one might reasonably ask. It must be admitted that it is instinctive rather than deliberate.

If you will watch the work of children carefully, you will find the rudiments of such a sense of balance, needing only a suggestion here and there to bring it out. It has been found time after time that a teacher's suggestion for a touch or two to help the distribution and balance of colour has met with instant approval on the part of the child. The need has been felt, although ways and means have not been apparent. Every care should be taken to preserve the instinctive nature of this quality in a work, and theorizing to the class on the point is liable to do harm. The teacher will do well to analyse the work of some of the old masters to see in what an amazing manner the balance of light and dark and colour has been managed.

Study the illustrations to the section on Illustration and Picture Making. In Plate I (St. George and the Dragon) notice how the red, the green, and the black are distributed. This is instinctive, and as natural as the rhythm in the work of a true poet. Plate VI again shows the same tendency, although in the two cut paper figures the mass of yellow is so placed as to predominate the arrangement, and not require balancing by other touches. The Red Riding Hood illustrations on Plate VII are likewise predominated by the mass of red, although they exhibit a sensitive distribution of white and brown. Plate V is a magnificent example of colour distribution, and, although the Princesses in black make rather a heavy note, it will be seen that near the bottom left-hand corner black has been employed on a chair, and that the heavy colour on the curtains tends to restore the balance. Without this, the whole of the attention would have been drawn to the dark clothes of the Princesses on the right. One feels sure that this child was absorbed in

her work, and that the whole of her powers were thrown into the production of this picture. When that happens the teacher has little to do but to say "Go on," and share in the enjoyment of the creation. It is with the child who works with less concentration that suggestions with regard to balance of colour have to be made. On Plate II the girl running is another good example of instinctive colour balance. In the other Illustration Plates, strangely enough, the colour balance can still be detected in the arrangement of dark and light.

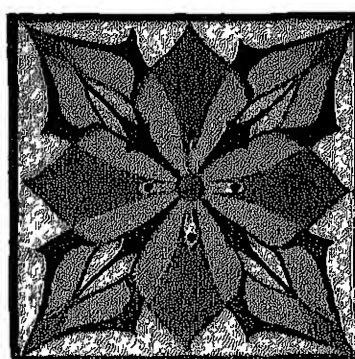
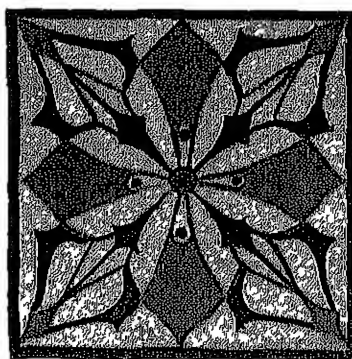
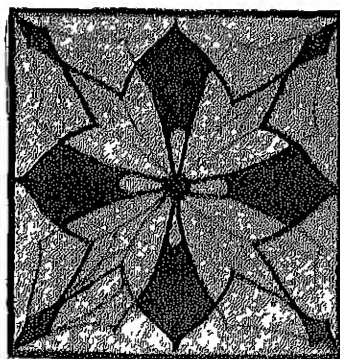
The same, of course, applies to pattern, and that it is instinctive will be discovered in the study of the work of primitive people. Knowledge of this should influence the method given for colouring a pattern. After the background has been decided upon, one colour should be taken and parts of the pattern picked out so that, in one colour alone, the pattern has a sense of completeness. (See pattern on Plate II.) A second colour can then be woven through the first, being balanced so as to preserve the sense of completeness, and likewise with the third colour. Each colour should help the other, like the parts of a song.

In all-over patterns, of course, there is bound to be a certain amount of distribution arising from the nature of the pattern, but, in space filling, children sometimes isolate the different colours and so spoil the unity of effect, incidentally making it clear that the mind is not working properly, but is merely concerned with detached thoughts. In such cases it would be well for the pattern to be repeated with specific instructions as to how to obtain a better distribution of colour. The child can then compare the two and see the value of distribution and balance. While this is being done, the successful workers can be asked to try a second colour scheme for the same pattern.

Examples of colour balance in pattern by children can be seen in the Plate of Raffia work (opposite page 1104), and in the Tinfoil paper design (Paper Tearing and Cutting section).

Colour Mixing and Matching

In the early stages (ages 7 and 8) freedom should be allowed. Both water-colour and pastel



By courtesy of

The British Museum

Two girls
(Shigeomasa)

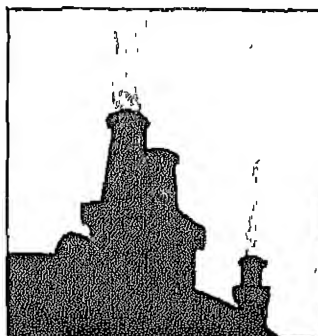


PLATE II

COLOUR DISTRIBUTION AND BALANCE

boxes should have a dozen different colours, and, as has been said before, there should be a large range of colour in whatever material is used. By 9 years of age, it will be possible to introduce a more systematic study of colour mixing. The subject will have been touched upon, casually and accidentally, earlier. How do you make grey? will probably have been asked, and the fact that the colours change when mixed will have been noticed, so that the pupils will now be ready to study how they change.

For this purpose a more limited paintbox is desirable.

The one recommended in the *Handbook of Suggestions for Teachers* is good, although chrome yellow is preferable to yellow ochre, in spite of its opaqueness. The colours given are --

YELLOWS . .	Gamboge and Chrome yellow
REDS . . .	Crimson lake and Vermilion
BLUE . . .	Cobalt and Prussian

plus Black for design purposes.

This box has its limitations, but it also has wonderful possibilities. It must be remembered that most artists limit their palette, usually with very beneficial results, but the limited palette consisting of Gamboge, Crimson lake, and Prussian blue, which is used in some schools, is too severe, and is responsible for lack of variety in the colour schemes evolved.

The first step in the study of colour mixing should be the making of a class colour chart. For this purpose two Imperial sheets of white cardboard (30 in. \times 22 in.) are required. Divide the width of each sheet into alternate spaces of 1 in. and 2 in.—eight 1-in. spaces and seven 2-in.—and rule columns. Soak cakes of the seven pigments in small saucers of water overnight, and, with the colours as strong as possible, paint seven 2-in. squares of paper. Make these look as much like the colours in the box as possible. Stick these in a row at the head of the columns on one of the sheets, and underneath each print the name of the colour. It is important that the children know the names of the colours they are using, and this line of the chart is there for reference when necessary. This should be prepared before the lesson.

For the lesson each child will require pieces of

paper 3 in. \times 2 in. Each piece must be ruled across so as to divide it into spaces 1 in. \times 2 in., and 2 in. \times 2 in.

The first step is to study the effect of watering down the colours. Starting with Chrome yellow—which by the way must be perfectly clean in each box—let each child mix a medium tint and lay it flatly on the 2-in. square on one of the pieces of paper. This is easier said than done if method is not employed, the colour refusing to go on flat; so at this point the laying of a flat wash can well be taught. This is done by holding the paper by the top left-hand corner and tilting it. With the brush full of paint, sweep across from the top left-hand corner to the top right-hand corner. Change the brush again, and make a second stroke, touching the first, but below it, and so on, until the paper is covered, when the superfluous paint at the bottom may be removed with an empty brush. Throughout avoid retouching, as the more the paint is disturbed the worse the effect. Each child can now write in the inch space of the paper—Chrome yellow and water. The neatest one can be chosen and stuck to the chart below Chrome yellow.

On the second piece of paper, a still lighter shade should be painted, and again the best one placed on the chart. All seven colours should be treated in this way, so that the children know what the colours look like when they are watered down.

This can be made the work of one or more lessons according to the manner in which it is organized. That red and water make pink will be a discovery to some children, and that black and water make grey will be news to many. Each child should be supplied with an envelope to store the pieces of paper thus coloured.

The second lesson can be devoted to green. With the given set of colours, there are four ways of mixing blue and yellow, viz.—Chrome yellow and Cobalt blue; Chrome yellow and Prussian blue; Gamboge and Cobalt blue, and Gamboge and Prussian blue.

Under a heading of Yellow plus Blue equals—(to which four rows will be allotted), place at the beginning and end of the first row respectively a square painted Chrome yellow, and a square Cobalt blue. On the second row likewise Chrome yellow and Prussian blue, and likewise

as per table above for the other two rows. Thus five columns will be left in each row.

The class should again be provided with paper as for the first lesson. Start by letting them mix up the Chrome yellow, and then allow them to add Cobalt blue. The yellow is mixed first to avoid tainting the supply with blue. As no stipulation has been made with regard to proportion, a variety of shades of green will be obtained.

Each child can tint his paper with his own shade. From the work of the class pick five tints, two inclining towards yellow, two towards blue, and one medium. Stick these in their order between the Chrome yellow and Cobalt blue on the class chart. Repeat for the other pairs of yellow and blue. Twenty shades of green will thus be recorded, and the equation at the top of the section can now be filled in—Yellow plus Blue equals Green. Each child will add a collection of greens to his envelope.

In the same way Yellow plus Red and Red plus Blue should be dealt with.

The results of these experiments will fill one of the sheets of cardboard, and for a while colour mixing might be given a rest. When it is resumed, experiments in mixing three colours—Red, Blue, and Yellow—should be tried. These will fall into three classes, viz.—

1. With a preponderance of Red
2. With a preponderance of Blue.
3. With a preponderance of Yellow.

The equations might be written thus—

RED plus BLUE plus YELLOW equals BROWN,
BLUE plus RED plus YELLOW equals GREY,
YELLOW plus BLUE plus RED equals GREY-
GREEN or BROWN-GREEN,

the results being recorded as discovered.

At least ten shades of each should be selected for the chart.

One further series of experiments should be tried, namely, the mixing of black with each colour. It will be found that Black and Red give a brown, and Black and Yellow a green, and Black and Blue a blue-grey.

After this, questions might be asked as to what would happen if we mixed Orange and Blue, Green and Purple, Red and Green, or Yellow and

Purple, and so on, the answers being verified by experiment. The results painted on paper can be added to the collection in the child's envelope, names of colours being written on each slip. This envelope is really an extension of the colour box, and may be referred to when a tint has to be found either in matching or for a colour scheme.

A Colour Matching Game

As exercise in colour matching, the following game will be found useful. Each child is provided with two slips of paper and a piece of scrap paper. Every child mixes a colour and flat tints one of the pieces of paper. The back row child then passes his tint to the child in front of him, who passes his to the row in front, and finally the front row child takes his tint to the back row. Each child has now to match the tint he has received, and flat wash the second piece of paper with it. The class should be divided into teams, and the first team to match, say, six, or a dozen, tints correctly, should be declared the winner.

Teachers sometimes distribute pieces of material or pastel paper for colour matching. This is not a fair exercise—the copy to match should be made with the materials the child has to use.

Finding Colour Schemes

In the early part of this section, it was stated that some combinations of colour cause irritation, and others give pleasure. A good colour scheme for a pattern is naturally one which gives pleasure, and for illustration one which is in keeping with the spirit of the subject, of which more will be said later. For the present we will deal with ways of finding good colour schemes for patterns. Although the effect of a colour scheme cannot be fully realized until it is on the pattern, some discretion is needed in choosing the colours at the outset.

If the children are told to get out a colour scheme for their work, or merely told to colour their work, it will be found that the same sets of colours turn up time after time, and the pupils, therefore, are not widening their experience. The reason for this is that few children

can imagine new colour schemes. They can only choose the colours which are before their eyes, viz.—the colours in the box. The majority of the colour schemes chosen will be crude variations of red, yellow, and blue, or red, yellow, and green.

The P.F.T. Colour Wheel Chart

The three circular bands of colour should be cut out and pasted on the edges of three cardboard circles. These should be arranged so that they appear as in the chart. A circle of white cardboard, the same size as the largest wheel, should have two wedge-shaped apertures, the same size as the one shown, cut in it. Each of these apertures should be so arranged as to allow a set of three colours, one from each wheel, to be seen together. The strip of seven colours with their names should be mounted on this cardboard. The four wheels should then be fitted together with nut and bolt so that they can revolve freely (see Fig. 2).

By rotating the wheels no less than 13,821 different colour schemes may be examined—some of which are good and some bad. Two schemes can be seen simultaneously and compared. If neither is pleasing the wheel can be rotated and others examined and compared until a choice of scheme is made.

Three main colours will be found sufficient for most schemes. To increase the number slight variations of the colours chosen may be added. As a rule, the smaller the number of colours in a scheme the more easy it is to get unity and harmony.

Each colour has a letter and number printed on it. The letter is merely a serial letter, and enables the teacher to make a note of a particular set of colours so that they can be rapidly found again. Thus scheme A.M.C. would mean colour A on the inner wheel, colour M on the middle wheel, and C on the outer wheel. The numbers refer to the colours used in mixing the tints, the key to which should be mounted on the cover wheel.

For example, a colour on the wheel marked 2-4-7 would be composed of gamboge, crimson lake, and black. This is of great help in matching the tint, as only the proportions of the colours

and the amount of water have to be ascertained by experiment.

At times the teacher may profitably spend a few minutes turning up different colour schemes and asking members of the class which they prefer. This practice will quicken judgment and taste in colour.

Sometimes a colour scheme for a pattern may be set from the wheel, the children being given

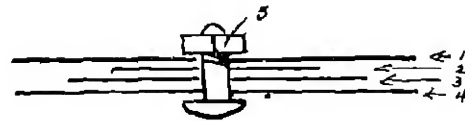


FIG. 2

Section of Colour Wheel

- 1 Cover with 2 apertures 2 First circle
3 Second circle 4 Third circle 5 Bolt.

the names of the colours required to match the different tints. At other times the wheel will be found of great value for individual children, particularly those who have very little idea of a colour scheme.

The wheel should create interest in colour. There is an element of experiment and surprise in it which fascinates children. It also contains many unusual tints, and so opens new fields of experiment.

Further Suggestions

The second method of choosing a colour scheme will be by means of the slips made while preparing the class colour chart. The colours can easily be placed side by side so that their effect can be seen. As each slip should have written on it the colours of which it is composed, the mixing of paint to match should be an easy matter. Two or three schemes should always be asked for, and the pupil made to choose the best out of them. For the purpose of this section a number of colour schemes chosen by children have been collected, a selection of which are given on Plate III, E. The ages range from 7 to 11, and two from each child are given, marked 1 and 2, according to the preference of the child. The pupil aged 7 preferred rich colours in contrast to colours in harmony. This choice is certainly on the bright side, but then so is his nature. Any one knowing

the boy would have seen that his choice was a true one. The pupil aged 9 preferred rich colour in harmony, and the one aged 10 subdued colours to bright ones, while the pupil aged 11 preferred a warm scheme in harmony to a cold one. These schemes are not meant to be typical of the ages. They are given firstly to show that all children have preferences, and secondly to show the variety that might be obtained from pupils. It is more important for the teacher to make the children experiment and choose than to give them definite instructions as to what colours to use. The taste of each child varies according to character, experience, and home influence. It may be objected, however, that some children never will choose good schemes, to which one might reply, *Nil Desperandum*. The son of a publican, a one-time pupil of the writer, was interested in sport, and art did not seem to be in his line. Sport, however, developed his character, and made him feel that, if he tried, he could overcome difficulties, and one of his difficulties was the art lesson. It was not long after this that he produced a beautifully decorated vase, a little masterpiece of skill, patience, and colour. So that, if the child's mind is directed to the problem, and the materials are there, the result is more likely to be good than not. It is a matter of education—i.e. leading out—rather than of teaching or instruction.

The third method by which colour schemes can be found is from Nature. All imitative lessons fail somewhat if they do not give knowledge whereby creative work can be improved. In a painting from Nature, if no notice has been taken of the colour scheme, a valuable piece of study has been missed. On Plate III, C, D, nature studies with colour schemes from them are shown. It is sometimes possible to get more than one scheme out of a study as is shown in the autumn leaf. In each of these schemes an attempt has been made to preserve the colour proportions of the original.

A change in proportion can entirely alter the effect of a scheme, as is seen at B on the same plate.

A fourth and a most exciting method of finding colour schemes is by the colour blot (Plate III, A). Colours taken haphazard from the box are blobbed on to scrap paper, and are allowed to

mix, here and there. Four strips of white paper are taken and arranged to form an adjustable frame. This frame is moved about over the blot until a patch in which all the colours go well together is found. These colours are then matched and arranged in a chart, the component of each colour being written against it. The schemes at B are taken from the blot A. Two sets of colours have been arranged in different proportions to show the effect of change in proportion. This method of finding a colour scheme gives valuable training in colour matching, and gives the teacher a ready means of suggesting experiments in colour schemes.

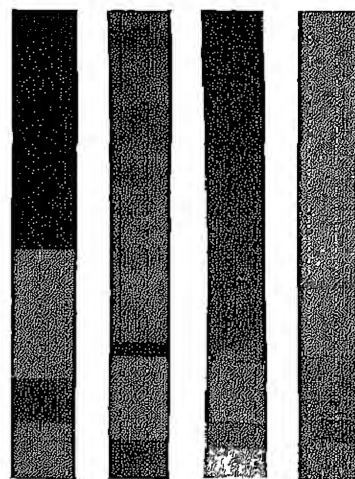
Although a good colour scheme may have been prepared, when it is applied to a pattern it may require adjustment if it does not turn out as expected. "Art is not a mechanical trade," and sensitive adjustment is constantly needed. It is the exercise of this sensitive adjustment that is the real training.

A fourth method is the dictated colour scheme. For example, a scheme of browns and greens might be asked for, or a definite colour, painted on a piece of paper and pinned on to the board with a white sheet of paper for background, given as a fixed note in the scheme. In any dictated scheme, there should always be latitude for variety of individual preference. Dictated schemes are useful when it is felt that the class has missed certain types of colour scheme.

Colour Schemes in Pictures and Works of Art

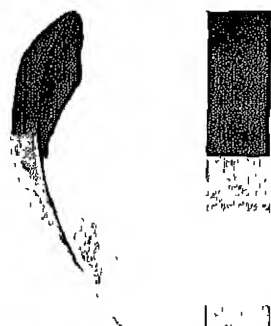
While dealing with colour schemes, it will not be amiss to look at the colour schemes in pictures and fine examples of craftwork. With flatly and simply coloured pictures, an analysis of the colour scheme might be attempted as is shown on Plate II underneath the picture of "Two Girls" by Shigemasa.

Those who live in London or in large towns where there is a museum are fortunate, and will be able to make a visit particularly to look at the colour in beautiful things. Those whose schools are in the country, or small provincial towns, should obtain a collection of coloured post cards from the Victoria and Albert and



B

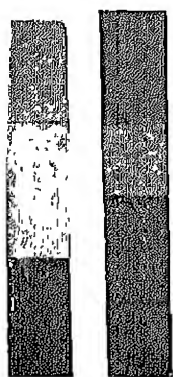
A



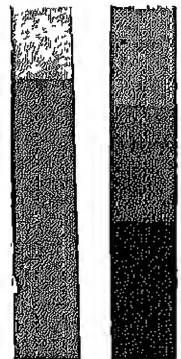
C



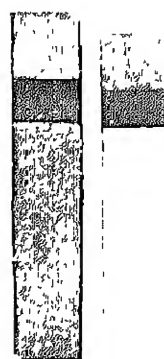
D



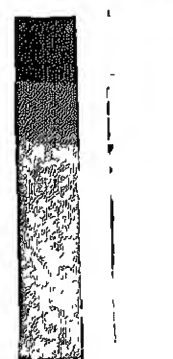
Age 7



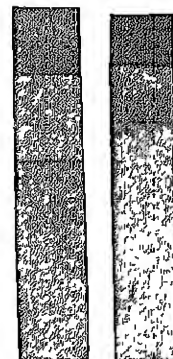
Age 8



Age 9



Age 10



Age 11

PLATE III
CHOICE OF COLOUR SCHEMES

the British Museums, and from the Medici Society. These are all fine pieces of colour printing, and are only a few pence each. The following list is recommended for study—

Obtainable from the British Museum—

	No. in Catalogue
Bronze shield with enamelled studs	Early B. 55
British	B. 56
Bronze with sunk enamel, Early British	B. 57
Enamelled bronze trappings, Early British	B. 58
Early British enamelled mount with loops	B. 58
Am standing by the door of his tomb.	
Papyrus	No. 10470
Coffin of Pen-sensen-Heru	No. 24906
Hiroshige, Suwara, Rainstorm	B. 132
Kiyonaga Girl on a bridge	B. 260
Kiyonaga Girl on the sea-shore	B. 263
Shunsto The interrupted letter	C. 70
Harunobu, The poetess, Komachi	C. 77
Kiyonaga The cool of the evening	C. 82
Shigemasa Two girls	C. 80
Utamaro A girl painting her lips	C. 84
" The artist painting a landscape	B. 14
" Folding a length of cloth	B. 16
" Watching divers for shell fish	B. 13
" The brocade dress	B. 18
" Child upsetting a gold fish	C. 85
Cleik, knight and labourer Sloan MS.	B. 210
French and English Expedition to Barbary	B. 165
The Annunciation and Nativity	B. 1
Earl Marshal's challenge to the Earl of Derby	B. 618
A battle in the war between Shah Ismail and the King of Shirvan	B. 35
Tame black buck and groom	C. 130
The escaping elephant	C. 129
Women at a well greeting Rama	B. 197
Sultan Mohammed and Miran Shah	C. 46
Scene from Romance	C. 57
Loading a camel	C. 122
Ox and mule at a well	C. 126
King Hormuza reproving his son	B. 27
Portrait of Ja'far Beg	C. 55
Baz Bahadur and Rupmati riding by moonlight	C. 133
Youth reading by a blossoming tree	C. 121
Girl walking in a starry night	C. 132

Obtainable from Victoria and Albert Museum—

A picture book of colour Price 6d.	
Persian art series of postcards, Nos 1 and 2 is each series of 6	
Glazed earthenware bottle—Turkish	C. 20
Porcelain vase—Chinese	C. 871
Hokusai The Great Wave	E. 24
Katsushika, Taito Carp swimming through a whirlpool	E. 2128-1899
Woollen pile carpet	T. 24
The prophet Jonah	M. 68
The Beggar Lovat Fraser	E. 15
Landscape with river and cattle Colman	P. 20
Brighton beach John Constable	P. 100
The Adoration of the Magi	L. 20
The Nativity	L. 40
St. Paul disputing with the Greeks	M. 64

	No. in Catalogue
Porcelain vase—Chinese	C. 85
Earthenware jug—Turkish	C. 93
Earthenware jug—Turkish	M. 62
Porcelain vase—Chinese	C. 23
Ancient Roman mosaic	A. 146
The Virgin and Child	A. 144
Chair seat	T. 134
Embroidered pillow case	T. 124
Panel of English embroidery	T. 25
Embroidered cushion cover	T. 121

Obtainable from the Medici Society—

Anolfini, by Van Eyck	No. 17
Coloured Persian tile in relief	
The Annunciation, by Fra Angelico	
The Lament, by Karel Fabritius	
The Duchess of Milan, by Holbein	
Portrait of an Unknown Lady, by Pollaiuolo	
Beatrice d'Este, by Antonio di Predis	
Portrait of the Artist's Mother by Whistler	
Ecce Ancilla Domini, by Rossetti	

In ordering from a Museum, catalogue reference numbers should be given. To this collection the teacher should add pieces of material of good design and colour, and well coloured objects, old and new, when obtainable.

By continued study and experiments with colour, the crude choice which marked the first two or three years will disappear. The colours may still be strong, but they will tend to richness instead of rawness, and here let it be emphasized that no one type of colour is good, or bad. Some teachers always insist on delicate colours, others on sombre colours, but such practices are bad. The work of the teacher, as the Primary Report says, is "to ensure that the supply of inspiration and material does not fail. In addition, exercises thoughtfully and cautiously devised which are intended to increase ability to express his ideas should be given in answer to a felt need on the part of the child."

So far we have dealt with colour from the purely aesthetic point of view. It must be mentioned that, for well-directed work, the teacher should train his or her own sense of colour on the lines indicated here, as, without a developed colour sense, it will be impossible to make wise suggestions to the child or appreciate the child's development. A short while ago a teacher was found to have told his class to use three colours which in no way could be made into a good colour scheme. Never having experimented himself, he was afraid to direct the children to experiment. An hour painting

with a paint box would have completely altered his outlook.

Colour Schemes in Illustrations— Emotional Value

Now let us consider colour schemes in illustrations.

An illustration is a pattern in that it is an arrangement of form and colours. It has been shown that some children have a fine instinct for this placing of form and colour; also, by analysis, the works of the great masters of painting have been found to exhibit that same sense for distribution of colour.

There is always a wonderful balance of colour in a fine picture, but there is also another vital aspect of colour in illustration, viz. the emotional value.

Both pattern and colour have an emotional appeal. One may think that this is far beyond the reach of Junior School children, but long experience has proved otherwise. In fact, they seem to sense the import of a work by its pattern and colour more than the older children, who want to interpret all they see by reason. As in the case of balance of colour, it is not to be taught, but merely suggested, and, in really sensitive children, it will come out instinctively. For instance, in illustrating a fairy scene, a sensitive child chooses delicate, fairy-like colours, and in illustrating a haunted house startling contrasts are naturally chosen by the child who feels its subject. A boy illustrating Christian and Hopeful in Giant Despair's dungeon failed to give the right emotional value to the drawing because he used bright colours for Christian and Hopeful, and kept the walls light in tone, so that the whole place looked cheerful. When asked whether the place looked like one in which you would be downhearted, he saw his error and corrected his drawing. He discovered that this gloomy subject needed sombre colour. When drawing, say, a carnival, gay colour would be naturally chosen, and to represent it in greys and browns would be to fail to catch the mood of the subject.

Again, colours by themselves have emotional qualities. Reds are often irritating and demand attention—although they can give an impression

of warmth and comfort. Blues are quiet and cold. Yellows, when pure, are refreshing, but, when dirty, sickly and unpleasant. Green can be refreshing, restful, and at times irritating. Purple can be overpowering, while mauve and violet can be refreshing and delicate. Orange is usually cheerful, and more stimulating than yellow.

The browns, greys, and grey-greens, take something of the nature of their predominating component.

This will not be directly taught to the pupils, but bearing it in mind, the teacher will be able to spot the note of colour which is doing harm and make suggestions for its alteration. Nothing dogmatic should be done. A direction or a suggestion should be given, and the child allowed to say whether the suggestion has helped toward a better expression of the idea.

When no particular emotion pervades the subject the colour scheme should be pleasant, and might be limited to a set of colours as in a scheme for a pattern.

Handling of Colour in Illustration

The colours can be applied flatly, with an outline like a poster, or in light and shade, as the child desires. Young children and primitive people rarely adopt light and shade, as they can usually express their ideas adequately without it. Because light and shade has been used in the object drawing lesson, it need not be insisted on in illustration if the child is giving full expression to his ideas without it.

For the youngest children, poster colours will be found useful, as they are brighter and dry flatter than water-colours, but materials should not be limited to any one stage. All through the Junior School, pastel, water-colour, poster colour, and coloured papers should be available, and should be chosen according to the subject set; sometimes allow the pupils to make their own choice of medium. If this plan is adopted, the pupils will begin to think naturally of their conceptions in terms of material, which is the correct method. Expression and material should be part of the same thought.

The supply of materials under some authorities is known to be poor, but the suggestion of

four alternatives does not necessarily imply a greater consumption, it does, however, mean more discretion and more sensitiveness on the part of the pupil. (See para. 7, p 878.)

Colour Emphasis in Illustration

There is another aspect of the problem of colouring an illustration. The colours should be so arranged as to bring out the point of the picture.

Often a fine drawing is spoilt in the colouring because the colour emphasis is put on the wrong thing. A dark against a light or a light against a dark will attract attention; if this attraction does not coincide with that required by the subject, then the balance is upset, and the attention called to the wrong part of the picture.

If the drawing is in water-colour, this defect can be remedied by giving the drawing a "bath," and then picking out the colour again. To do this place the drawing in a sink or in a flat dish (a large meat tin) of water, and wash it gently with a wide brush. Take it out, drain it, and blot it between sheets of blotting paper. The drawing may then be worked on immediately, and the old mistakes avoided. Some parts, perhaps, will not need retouching.

This is impossible if drawing books are used, but as stated in the *Handbook of Suggestions for Teachers*—

Each pupil should keep his own drawings together in a simple portfolio which he has made himself and which he can decorate at a proper time.

Such a portfolio can be made envelope fashion out of a sheet of brown paper and a piece of cardboard. It should not be made too tight, or it will not hold many drawings.

The Study of Colour Changes in Nature

A common difficulty which besets the colouring of illustrative work is due to the fact that we are prone to associate definite colours with things. For instance, a child invariably paints tree trunks brown, whereas observation would show that they are more frequently grey. Little account, too, is taken of the changes due to light

and atmosphere, and distant mountains will be painted the same vivid green as the grass in the foreground. This tendency should be gradually corrected.

When opportunity offers, even amid the smoke and grime of industrial areas, the children should be encouraged to lift their eyes sometimes to see the ever changing panorama of clouds in the sky, and the splendours of sunset, to note the fine pictorial effects of light gleaming through fog or rain or smoke, the reflections in a canal or river, or in pools of water, or the glow of blast furnaces on a dark night.

The effect of such experiences on minds capable of response is like that of listening to beautiful music and leads to a fuller appreciation of beauty. Those unfortunate individuals who are not susceptible and responsive, are not likely to be successful in any artistic effort—(*Handbook of Suggestions for Teachers*.)

A very practical way of widening knowledge of colour effect would be to commission the best artists of the class to make a series of drawings from observation, such as those of a chimney stack given on Plate II. The class should be given opportunity to verify what the artists have stated. If this is done a few times continual observation of the changes of colour will be stimulated. The teacher who has a fine view from the window of the classroom should be proud of it, and devote a few minutes now and then in allowing the class to look out of the window to watch a passing storm, or a rainbow, or a sunlight and shadow effect. Questions might be asked as to changes in colour of items in the scene. One Junior class (children of 7 and 8) known to the writer has windows on the one side of the room looking on to a range of hills, and on the other on to the open western sky. Under the wise direction of their teacher, the children have noticed the changes in the hills—blue-grey in the morning, and sometimes golden in the evening, while on every opportunity they watch the winter sunset. Who can state the value of this? Did not J. M. W. Turner's mother take him as a lad to a bridge over the Thames to watch the sunsets? What seeds of appreciation must have been sown by her!

Colour in Imitative Work

So far, colour in creative work has been dealt with, this gives greater freedom and more scope for the development of a colour sense, but there is also the imitative side of drawing and painting

by rubbing in, which only makes an uncontrollable mess.

In the third stage the shadows are introduced approximately. It will be seen that the shadows on the candlestick and on the book differ in colour. Every effort should be made to get the tone and colour values right. The practice of

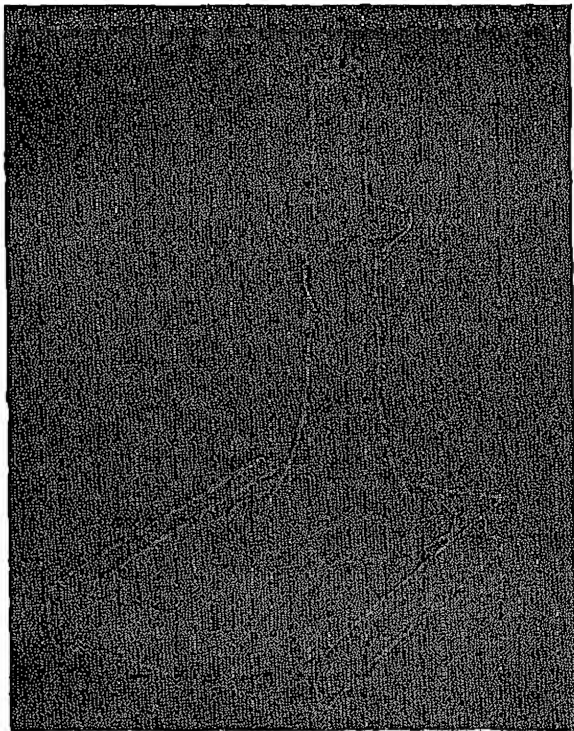


FIG. 3

First Stage of Pastel Drawing

using black for all the shadows is wrong, and destroys the colour effect.

The fourth stage is one of final adjustments. Not until all the parts are in and each part is showing something of its influence on the others can final adjustments be made. In this stage heavy touches may be used where necessary, and even a smudge may be employed if required. The practice of rubbing everything in is bad, but a smudge here and there may give exactly the effect required.

This demonstration is only one way of handling the pastel, but it will be found serviceable for most things.

Pastels may be used sometimes with good effect on white paper. The paper should always have a certain amount of roughness, and the object of working lightly is to prevent the grain of the paper from getting filled with pastel dust and thus becoming smooth and refusing to take any further marks.

Good sky effects can be obtained on white paper by smudging the pastel in with a piece of rag and picking out clouds or light parts with india-rubber. Among artists this method has been used with fine effect by H. B. Brabazon.

One of the most common faults in pastel work is the scale of the drawings. They are usually far too small. If the supply of paper is limited, different tints of wrapper paper might easily be pressed into service. The late Edward Stott, R.A., once showed the writer a pastel drawing on thin wrapper paper for which he had refused £100. No artist would think of doing a miniature with a tar brush, or a life-size portrait with a silver point, yet many teachers expect children to do pastel drawings on a scale so small that it would tax the skill of an accomplished artist. 15 in. \times 11 in. should be a usual size, and certainly nothing less than 11 in. \times 7½ in.

Certain subjects lend themselves to pastel. For instance, "Bonnie Night" or "The Rainbow" would be more easily rendered in this medium than in water-colour.

Water-colour Painting

It was once held that one should teach the technique of a medium before using it for any definite purpose. That is how a logician would go about art, as though the technique existed before and apart from the practice of art. Technique develops out of the use of the medium and the expression of the idea, and there are almost as many techniques for water-colour painting as there are water-colour artists.

In the early stages then no attempt will be made to teach ways of handling the medium. The teacher will find *The Technique of Colour Mixing*, by Leonard Richmond (Pitman), very enlightening on this matter.

In the early stages flat tones will be all that the child wishes to express. In fact, it seems that some pupils would always think in and be satisfied with flat tones if they were shown nothing more. There is nothing wrong with the use of flat tones. Most Oriental artists express all their ideas in that way, and express them often with rare beauty. When only flat tones are used, great care should be placed on their choice, as the question of realistic appearance does not arise. In flat treatment the outline and silhouette are more emphatic, and must be used to convey the expression.

The first definite piece of handling of the medium, viz. the laying on of a flat wash, is given in this section under Colour Mixing. An extension of this exercise is the graduated wash. Proceed as in the plain wash, adding more and more water to the colour as the work progresses. A blended wash in which two or more colours are used is done in the same way, with the exception that the second or third colour is introduced instead of more water. This is a very useful process for painting some kinds of skies.

The habit of using a full brush of colour and of working cleanly should be encouraged, although the beautiful qualities arising from this practice should not cause a sacrifice of correctness, but be combined with it as much as possible. Of course, to combine thoroughly the beautiful quality of the medium with correctness means perfect mastery of water-colour.

Two other processes are useful, and should be demonstrated. The one is softening a touch, and the other wiping out a light.

The natural stroke with a brush has well defined edges, but sometimes a touch with a soft edge is needed. There are two ways of obtaining this. The first is to place a stroke of water where the edge of the touch of paint will come. The paint will then melt into the water and give a soft effect. The other is to put the touch of paint first, and with a clean, wet brush, put a stroke along the edge (see Plate V). This should be done with one clean stroke, as it must always be remembered that the more a water-colour painting is worked over, the worse it gets.

Wiping out a light is done by emptying the brush by squeezing between the thumb and

forefinger, and picking up the paint. It must be performed quickly while the paint is wet. It is shown on Plate V on the bottom sphere and on the leaf. In the upper sphere no softening has been done.

These are the only processes the child will need, and with them a study like the daffodil on Plate V can be attempted.

In the first stage of this, the forms are painted in a colour which is between that of the shadow and the light. The lights are picked out as on the bract. In the second stage the shadows are added, being softened where necessary. The colour-changes in the shadows in the example should be noticed just as they were in the pastel drawing of the candlestick and book.

The example given is direct painting—i.e. painting without a pencil outline. A pencil outline may be used, but it will nearly always entail a loss of freshness. The Japanese, who are the finest brush draughtsmen in the world, are trained on direct painting on rice paper on which it is impossible to make an alteration. This condition makes deliberate work necessary, and is a valuable training. If children are asked to do this, like the Japanese, they should be allowed many sheets of paper, and no account should be taken of those they spoil.

There is no objection to treating a Nature drawing in the manner shown on the Wych Hazel on Plate V. Here emphasis is given to a pencil outline, and shadows are neglected, colour being expressed with flat washes. In fact this method is one to be recommended for Nature notes, as facts of form and structure can be expressed well by it. It will be noticed that examples on Plate V are framed with coloured lines. This should always be done as part of the exercise, their width and colour being matters of taste. This will be found to add greatly to the appearance of the work.

Outlining with a brush is often necessary. To do this successfully, certain things must be observed. The point of the brush should be used, and the brush held as vertically as possible. The handle of the brush should always be in a vertical plane with the line. If it is inclined to right or left, the upper part of the brush will drag and cause a ragged line. By allowing the weight of the hand to rest on the paper as

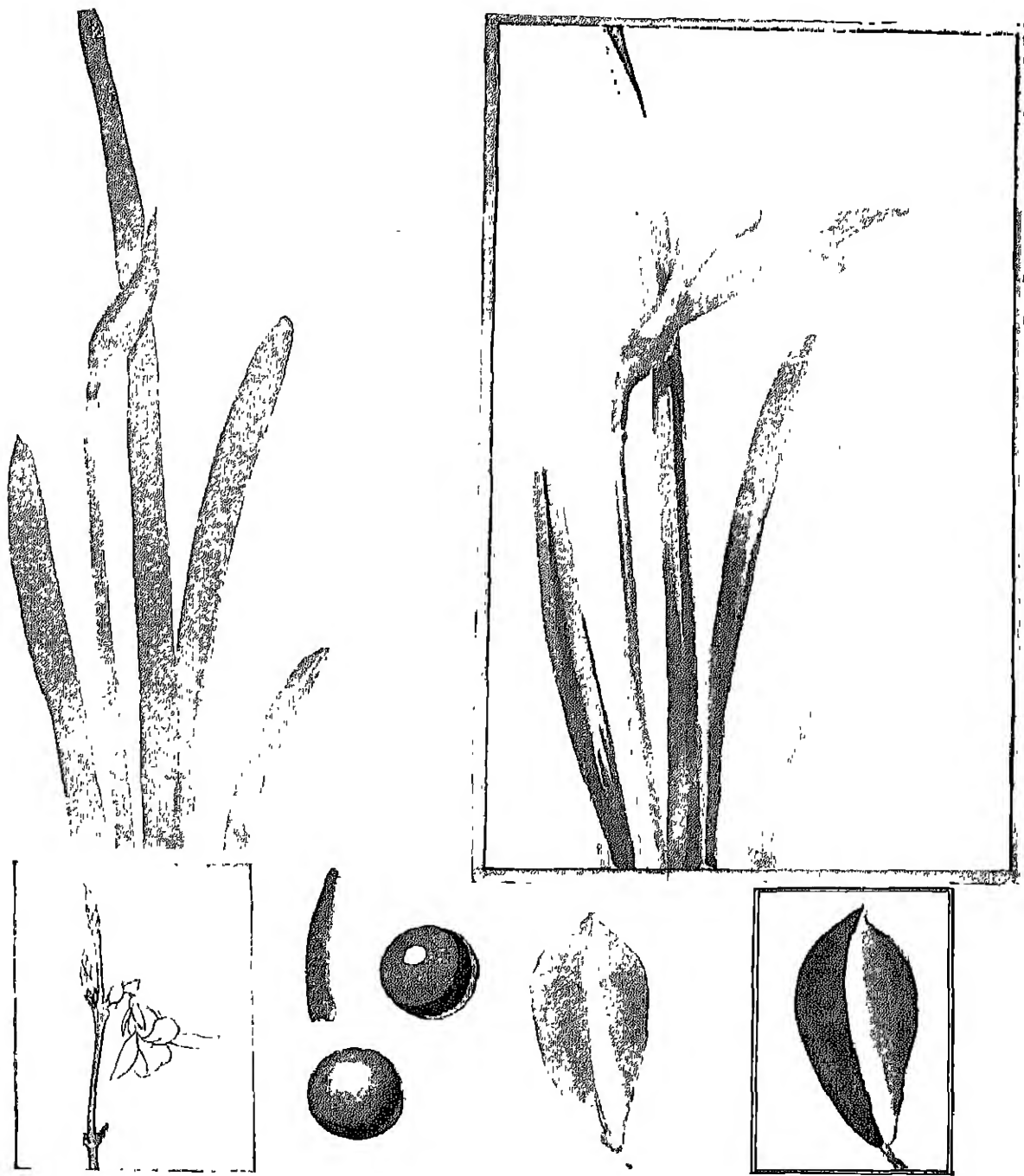


PLATE V
WATER-COLOUR PAINTING.

a kind of ballast, a long even straight line can be drawn. Once the children are shown how to do it, they will soon master the method which seems to have something of the nature of a conjuring trick about it. The movement in this process will be more from the arm than the wrist.

Colour in Life and School

All our work in colour is of no avail if it does not react on life. It is well to make the eyes capable of fine perception, and the mind able to make fine arrangements of colour, but such power must be applied to life—and first of all, to school life. It is, therefore, necessary that in all lessons in which colour occurs it should be used tastefully. Maps in geography and history need not be garish. Clashes of colour can be avoided in the arrangement of the school room, and great care should be taken with the colour scheme in decoration. Most teachers find that nearly every child with a really fine colour sense has been influenced by his home surroundings. Hence the great need for good colour in school surroundings. This is often difficult when fundamental mistakes have been made by the architect. To work in a room where bilious green tiles make a good colour scheme almost impossible is the unfortunate lot of the writer.

Colour training is not a thing that can be isolated. It is a part of most lessons in drawing and handwork. Even when only an imitative pencil drawing is required, the subject should be a good arrangement of colour, so that its effect is unconsciously absorbed.

Combination of imitative and creative lesson might well be made. For instance, in object drawing a bow of ribbon, a Chinese lantern, a sock, a frock (pinned out), a scarf, a doll, a banner, might be turned from simply imitative lessons into lessons of aesthetic value by allowing the child to choose colours for them, or even inventing patterns to go on them. The outline of the object might be copied from the actual thing—the colour can be invented.

Some Colour Projects

A fine project for team work in colour is the making and decorating of a model house or palace. The furniture can be made of cardboard

or light wood; rugs and curtains of material; pictures can be painted and mounted in *pass-partout*; vases, ornaments, etc., made of plasticine, which can be painted with water-colours or poster colour mixed with soap. Inhabitants of the house could also be made in this way.

The decoration of each room would have to be considered by the team responsible for it. The room should not be a medley of different ideas, but should be dominated by a scheme—a most valuable lesson in furnishing.

Stencilling and potato printing could be pressed into service for producing wall-papers and fabrics for the house. It is an excellent scheme for a mixed school.

Colour comes in everywhere, and the important work of the teacher is to guide the children to see that the effect of the ensemble of each room is good, and that nasty clashes of colour are avoided.

Another good project for team work is a model theatre. Each team can be given a scene to prepare. The figures can be made of plasticine, painted as already described, and mounted on small stands made of wire soldered to a piece of tin (Frontispiece). Again the colour scheme of the whole scene is important. It must be remembered that the stage is for the players, and that scenery is an accessory, and subordinate, a fact which little scene-painting enthusiasts will overlook.

A similar project to this, is to make a scene to illustrate a story which takes place in an interior. The box forming the room is a kind of stage.

Some Inexpensive Exercises in Colour

To those whose facilities for colour handwork are very limited, the following suggestions (four of which are shown in the Frontispiece) will be valuable—

1. *Book-markers*—made so as to ride on the corner of the book (see Fig IV). They provide two exercises for pattern for squares and a border pattern. They also give a valuable opportunity for teaching that all parts of a design should go together, i.e. the back must seem to belong to the front, and look as though it was the work of one mind.

2. *Blotters*—rectangles of cardboard with triangular corner pieces of paper. These latter should be decorated.

3. *Paper-knives*—made from old rulers. Files or rasps and sandpaper will be necessary to

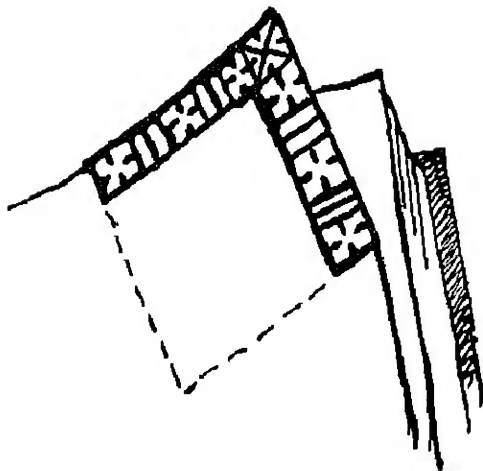


FIG. 4
Book-marker

shape and smooth them. (See examples in Frontispiece.)

4. *Book Wrappers*—made of cloth or stiff paper. They can be decorated with stencil or potato patterns. The class library books will supply a constant demand for them.

5. *String Caddies*—made of syrup, or similar, tins. The decoration is made on a rectangular piece of paper long enough to go round them. When completed, it is stuck to the tin. A nail hole, filed and hammered, is made in the lid, and into it a shoe-maker's eyelet can be fitted.

6. *Serviette Rings*—around small bottles or pots $1\frac{1}{2}$ in. in diameter a strip of paper (36 in. long and $1\frac{1}{2}$ in wide) is wound. After the end of the first layer, glue is applied to the paper so that it sticks as it is wound. It is allowed to set for twenty-four hours, after which the

edges can be rubbed smooth and level with sandpaper. The decoration should be made on a separate strip of paper and glued to the ring.

7. *Cardboard Boxes*.—These can be covered with paper and decorated.

8. *Plain Pencil Boxes or Skittle Handles*.—Children who have these might clean them with sandpaper and decorate them.

9. *Papier Mâché Pin or Card Trays*.—These can be made by pasting seven or eight layers of damp newspaper together inside a saucer. The saucer should first be lined with a piece of damp soft paper. Paste should be placed on this, and a layer of pieces of damp newspaper stuck all over it. Paste should again be applied and another layer added, and so on until seven or eight layers are complete. The inside surfaces should be finished with a circle of soft paper. When dry the tray can be removed from the saucer, trimmed, sand-papered, and decorated, preferably with poster colours. A finish can be given with varnish or, better still, a clear cellulose paint, such as Luc.

Conclusion

The Report *The Primary School* states—

It is generally agreed that all children should feel and recognize the joy of colour and the pleasure of rhythm and harmonious pattern, and the *Handbook of Suggestions for Teachers* also says, "The importance of developing the aesthetic side of human nature is bound to be considered in education, and no one can doubt that the drawing lesson should lead to a training in taste."

For these reasons the bulk of this chapter has been concerned with the creative use of colour, and not the imitative.

Imitation of finely coloured things or groups of things may form some of the lessons, but colour taste will get a chance for full development only when there is a constant possibility of colour choice.

ILLUSTRATION OR PICTURE MAKING

GENERAL PRINCIPLES

ALTHOUGH illustration, figure drawing, composition, and design are here treated separately, they must not be thought of as separate subjects, nor should they be taught as different sections of a syllabus. Every lesson must be intimately related to every other lesson, so that the pupils realize that they are always working with the same end in view. Especially is this the case in the Junior School, where the whole of the work should centre round "Illustration" or "Picture Making," and lessons on figure and object drawing should be given at appropriate stages in the development of a child's skill. Every drawing is a design, and the principles taught in picture composition are the same as those taught in pattern making of any kind, while the appreciation and understanding of colour can be approached through illustration as well as or even better than by any other method.

Lifelong Value of Creative Power

The child's most natural approach to drawing and colour is through picture making. Children are not concerned with the accurate representa-

tion of objects till a later stage, but are early thrilled with their own inventions, whether these be expressed in the form of picture or of pattern. To have created something, however crude or elementary, is a veritable achievement, helping the young artist to realize his own individuality. A small girl who was given two patterns to make, one dictated by the teacher and one of her own invention, wrote under the latter, "I like this one best because I made it—I myself alone." The power to invent and to express is of far more importance to the average man and woman than any accomplishment in neat and accurate drawing. The importance of securing independent thought and expression at an early stage cannot, therefore, be over emphasized.

Evils of Copying from the Flat

If properly taught, children, by the age of 12 or 13 will draw freely without fearing to express their likes and dislikes, and, accustomed to friendly criticism, will not have become self-conscious with regard to their own mistakes and

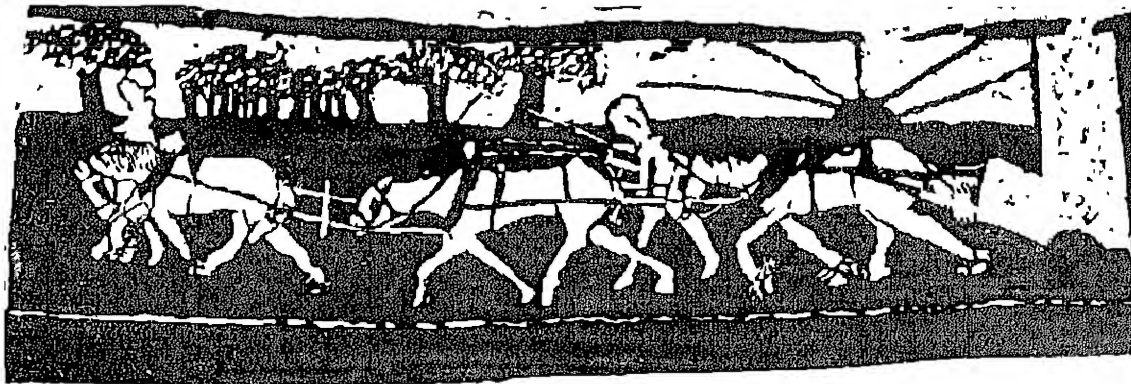


FIG. 1

Linocut made by a Child aged 10

Note the pattern of black on white and white on black. Also the expressiveness of the horses straining to pull a heavy load.

failures. If, however, they are badly taught, the harm done is still apparent when they are eighteen or nineteen. It is not so much their lack of technique as their timidity and constant reliance on others which make a barrier to progress. Here we see one of the strongest arguments against copying from the flat, and it is much to be deplored that such exercises still form part of some examinations. It is a refuge for the indolent—either pupil or teacher. The pupil finds ideas supplied, and the difficult translation from the solid to the flat already accomplished; no opportunity is left for invention or experiment, no encouragement given to study and observation. The teacher has no lesson to prepare, no hard thinking to do.

Influence of Pictures

It is, of course, impossible that children should be uninfluenced by pictures. They are surrounded by them at home, in the school, and in the street. Unfortunately, the average child is more familiar with poor illustrations than with good. Many girls' drawings are reminiscent of fashion plates, while the boys seem to favour the cheap comic papers. Children acquire by these means second-hand conventions which do not really express their own thoughts. To avoid this they must learn to discriminate between the good and bad in pictures by being shown good examples in such a way that they can learn to understand and appreciate them. They must also be shown many different styles in order that they may not copy any one. Thus pictures may form an important element in training without being used as copies, but they must on no account form the basis of the teaching, for a child's picture is and should be different in kind from that of the adult, and cannot be judged by the same standards.

Fostering Individuality

Too often children's drawings which are merely weak imitations of their elders' are classed as good because they are considered wonderful in relation to the children's ages. But their pictures should have an absolute, not a relative, value. Their freedom from convention and fearlessness

in attack is the peculiar asset of youth, and something which the finished artist, try as he will, can never quite recapture. This freshness of vision and naivety of expression, the peculiar birthright of the Junior School, it is the teacher's first duty to preserve.

Priority of Expression to Formal Work

These views have led to a much freer method of teaching than was in vogue some twenty years ago. There are still, however, two distinct schools of teaching, the one based on expression and the other on formal representation. In the former the starting point is the child's own desire to express, in the latter training in the drawing of actual objects comes first. Of the two methods it may be argued that one proceeds by psychological stages, the other by logical. Both are liable to failure if carried to extremes. In the anxiety not to interfere with the children's individuality, teachers have refrained from giving adequate help, with the consequence that the work becomes careless and lacks any sign of craftsmanship, while the drawings of the elder children show little or no advance on those of the younger. On the other hand, proficiency in draughtsmanship can come only as the result of a continued concentration of effort which is beyond the powers of the child in the Junior School. Disappointment takes the place of the spirit of adventure, and anxiety to draw correctly destroys the joy of invention. This is serious, and the damage so done is less easy to repair at a later stage than a lack of accurate draughtsmanship.

Perspective can be acquired with less expenditure of time and effort in the Senior School, when the scholars are interested in science and mathematics; but imaginative drawing does not come easily to the older children, for they have become self-conscious and knowing their own inability to draw correctly are ashamed at their own attempts.

Importance of Sympathetic Help

The balance is not easy to keep. It is necessary to give stimulus to the imagination without

substituting the teacher's vision for that of the pupil. Help must be given in draughtsmanship and technique without imposing a burden which may destroy all spontaneity of expression. This needs very real sympathy on the part of the teacher, who must understand and follow the child's natural line of development, and study the very beginnings where definite intention

choose the type of story best suited to the pupils' mentality.

From Symbols to Portrayal

Development in power of representation should advance side by side with the development of the mind. Children will soon become

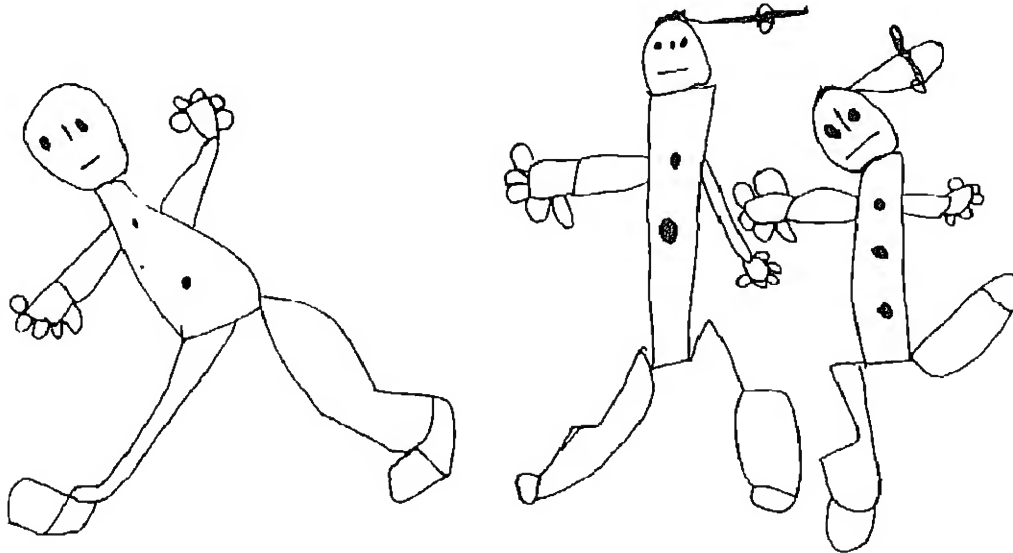


FIG 2

Drawing by a Child aged 6

A very promising drawing, for the child shows individuality, developing a formula for itself and using it with vigour and expression

emerges from the infant's happy-go-lucky scribbles. Children's interest is first awakened in the things around them which they can handle; they draw objects or people, but do not attempt to represent a story. The objects are unrelated and represented symbolically, that is, with only just sufficient resemblance to suggest the original. If the teacher has given the children a story to illustrate they put down the objects in that story in succession, without any attempt to bring them into relation with one another. However, they soon develop an interest in "doing." This may bring about the desired relationship, the action uniting two things: "Simon" *fished* "in the pail." They are then ready for story illustration, and the teacher must

dissatisfied with the old symbols, and will be very ready to receive such teaching as will help them to bring their drawings nearer to reality. Their attention will first be directed to figures, trees, and houses, as these form the material most needed for illustration. A study of children's drawings will best show the teacher through what stages they most naturally advance. At first trees are mostly represented by a round circle for foliage, supported by two lines forming a stem. This develops into a pollarded tree showing branches which all spring from the top of the trunk. Then these branches take their proper place at intervals up the trunk, and finally details of growth and character are introduced. These stages are useful, as, if too much

is attempted in one lesson and too many criticisms are given, the pupil is confused and discouraged. If, however, the lessons are carefully graded, the pupils' improvement is most encouraging—much more so, in fact, than in the Senior School, where advancement is of necessity much slower.

Having considered the general aims in the

teaching of illustration, we can now deal in more detail with the methods which may be used to help children to draw expressively and with invention, to teach them to observe and draw with character, to show them how to make pictures, and finally to give them a right understanding of tools and materials—so much is a necessary part of education.

EXPRESSION WORK

Intelligent children with a natural gift for artistic expression employ much of their leisure in picture making. Anything and everything in which they are interested is subject for their brushes, and they need no suggestions as to what and when to draw. This is an ideal condition, but it is more a matter of habit and circumstance than might be imagined. Real ability is indeed rare, but even children of average capacity can, with encouragement, express themselves as easily in pictures as in writing. The habit of drawing on all occasions must be formed. There are many ways in which this may be done apart from the art lesson. Sketch clubs can be organized in which the children set the subjects; illustrated diaries may be kept in the holidays; some children with literary talent can write and illustrate their own stories; notebooks in connection with other subjects may be profusely illustrated; when answering questions, explanations can be made not only in words but with diagrams. Thus drawing becomes a means of expression as easy or even easier than writing.

Teacher's Guidance

In the Art lesson more definite help and direction should be given than in those lessons in which drawing is merely an accessory to other subjects. Yet even in formal teaching as much freedom should be allowed as possible, and every good teacher will try not to let his or her own style and peculiar predilections influence the class to any great extent. Lessons which aim at producing certain results should be given at frequent intervals, but, in between these, time will be allowed for the children to work out their

own suggestions. In these "free" periods the teacher will work with individuals, helping them with their technique as they need it, and giving friendly criticism. Many children are shy and sensitive at first, and must be led to talk about their work, and to feel that the teacher is truly interested. From these discussions they will learn new and better ways of putting down their ideas, and yet be able to make pictures which are really their own.

Acting as Preparation

In the periods devoted to definite class teaching, various methods which will result in expressive drawing may be employed. The stiff unbending figure may be changed into one full of expression if the children first act the part, so that they realize what poses of the body best express certain attributes. A class of children unaccustomed to imaginative drawing responded to the stimulus of acting, and after representing such obvious adjectives as "miserable" and "angry," at their own suggestion attempted with considerable success the far more subtle one of "sulky."

Dramatization

More elaborate is the dramatization of a scene, for example an historical incident or an incident in a play, a geographical scene, or a scene from real life. There is scope here for making useful correlation between different subjects, thus adding to the vitality of the whole curriculum.

Before they begin to draw the pupils must consider how far the spirit of the incident has been

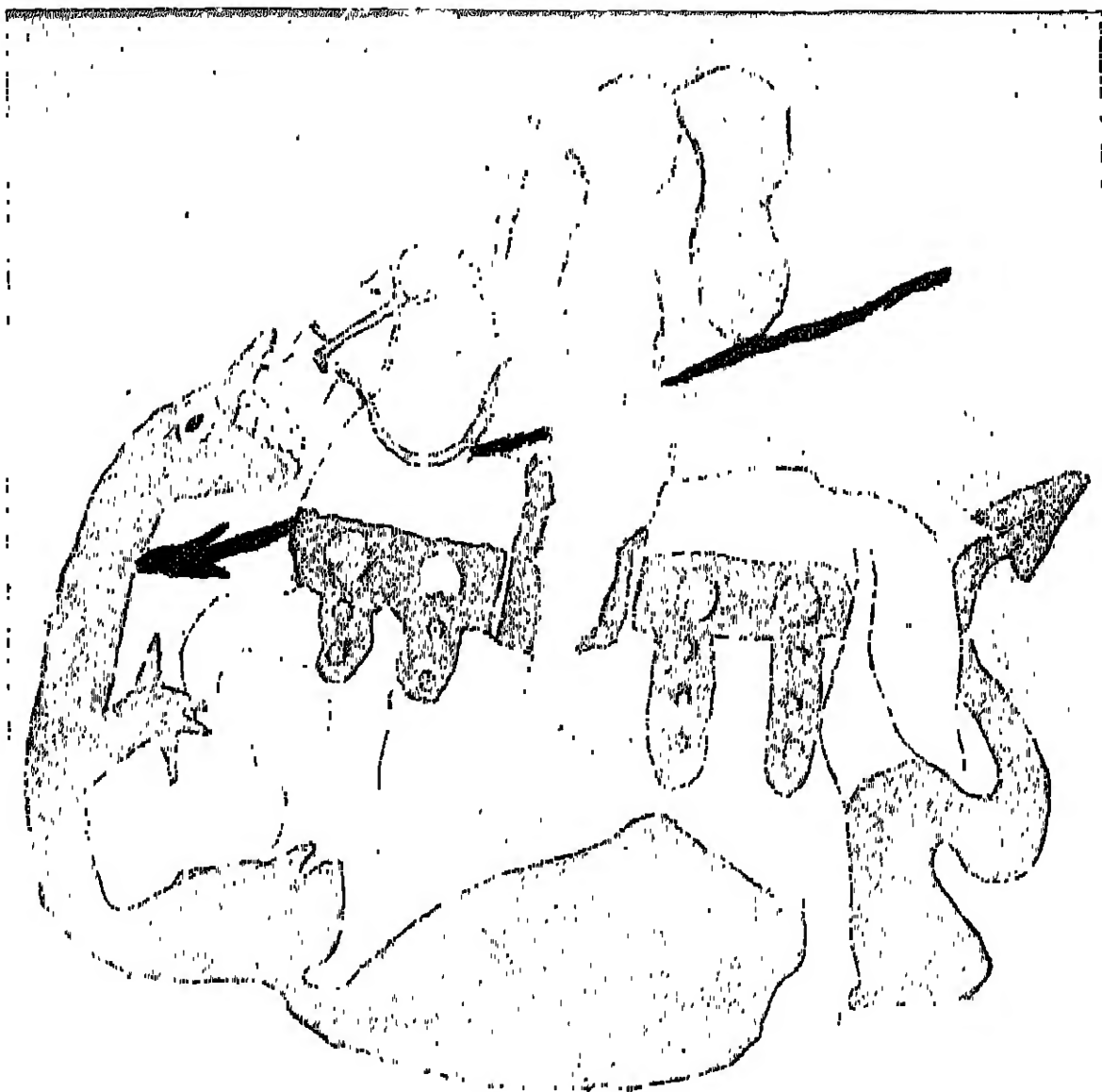


PLATE I

St. GEORGE AND THE DRAGON, BY CHILD AGED 7½

This was painted on toned paper. Notice the bold decorative treatment and excellent space filling.

expressed. They must take turns in the representation to see how different members of the class will conceive the part. The whole class will be on the alert, and will become critical of the difference between an expressive and an inexpressive attitude, and this will be reflected in their drawings. It is obvious that in dramatization attitude rather than speech will affect the drawings, and that representations in dumb show will be of the greater value, because in that case expression will depend entirely on pose and action. But the results of such work will be disappointing unless there is some attempt to bring home to the consciousness of the whole class the dramatic nature and real meaning of the incident, or scene, that they are about to express. (See *Dramatic Work*, Volume I, p. 263.)

Scope of Junior Course

Before the picture is begun there are many things which the artist should take into consideration. For instance, the selection of the background and accessory parts; the colour and atmosphere; the character of the line, and general treatment of the materials. It must not be imagined that all these things can be dealt with in one lesson. This would necessitate too much teaching and too little painting. Too much must not be expected from the early attempts, and the teacher must not be discouraged because though good in some particulars the results are very imperfect in others. The children's artistic knowledge must be built up step by step, each stage being a preparation for the next. Each lesson must deal with some one particular point only, and while that is under consideration the rest must be left. Which of the points mentioned should be dealt with first is so much a matter of circumstance that the choice must be left to the individual teacher.

Selecting Relevant Accessories

The significance of a drawing will depend greatly upon how far the parts of which it is composed do or do not support the main idea. As soon, therefore, as the children are making pictures which require backgrounds and accessories to the main figure or subject, the selection

of this material becomes of the utmost importance. The first thing to emphasize is that all extraneous details which do not actually contribute to the idea which they wish to express are better left out. If the subject is "Anger," the clenched fist, broken toys, overturned chair are all in character, but a door is useless for it cannot be shown that it has been banged, and the kitchen dresser with its plates and dishes is irrelevant detail detracting from the figure which best expresses the idea. It is best to introduce the question of selection by means of the more abstract subjects, such as Anger, Despair, Speed, because this allows a wider field from which to select than would be the case when depicting some particular incident. If, for instance, the subject were "The Hundred Yards Race" speed must of necessity be represented by a running figure, while if the subject set be "Speed" the young artist might select among other things a train, a cyclist, or a man running. It is for the artist to decide which will best serve the end in view. Though the train is fastest, owing to its rigidity it is less likely to prove successful, while the cyclist and running man can convey the idea of speed through their attitudes. It is true that the smoke of the train and the bleating of the wheels can accomplish something, but they form but a small part of the whole, while every part of the picture of the cyclist—the bent form, the clothes and hair blown back, the trail of dust, and the bleared wheels contrasted with the immovable background—contributes to the expression of swiftness.

Selection of Treatment

Following naturally on the selection of material is the selection of suitable treatment. Too often a school will practise only one style of work. Illustration will be executed only in line, or in water-colour, or in outline and wash, the teacher not having seen the educative value of using different methods in order that the pupils may understand the varied possibilities of each, and have a better opportunity later of developing individual style. Moreover, the pupils cannot understand thoroughly any one method unless they have tried more than one and can make comparisons.

Interpretation through Colour

Colour is a natural means of expression for children, and its suggestiveness is well within their comprehension. They should be familiar with the spectrum circle, its "families" and its "contrasts." They can quickly appreciate the difference between hot colour and cold; the warm yellows and oranges being associated with the sun, and the cool blues with shade. Young children are attracted by the pure colours of the spectrum, and should be encouraged to use them without mixing, and if at first provided with a yellow, orange, red, blue, and purple, with the addition of a black, they will find these sufficient for their needs. With these they can represent the difference between such broad contrasts as *Night* and *Day*, *Spring* and *Autumn*; they can produce bright decorative pictures of many kinds, limited perhaps, but attractive and suited

to their age. As they develop and require a wider range they can learn to mix the neutral colours. "Night" will now become more mysterious and more subtle through the slight neutralization of its blues and violets. "Autumn" gains in depth and richness as its reds and yellows merge into the softer, more neutral, siennas. With this added knowledge a suitable scheme can be found for almost any picture. Cinderella, left forlorn by the hearth, needs a "sad" scheme, but her ballroom should be bright and gay—the one painted perhaps in neutral greys and browns, the other full of yellow light with contrasting splashes of bright greens and blues among the dresses. The various woods of legend and story give opportunities to explore the suggestive qualities of different schemes of green. This psychological aspect of colour is one of the best introductions to colour mixing and colour harmony. The



The Battle of Blenheim

Apr. 11

FIG. 3

Line Drawing in Black Chalk

Note the suitability of the medium and the bold vigorous lines expressing action. Note also the suggestion of a whole army given in a limited space by putting one figure behind another and showing only parts of those at the edges of the picture.

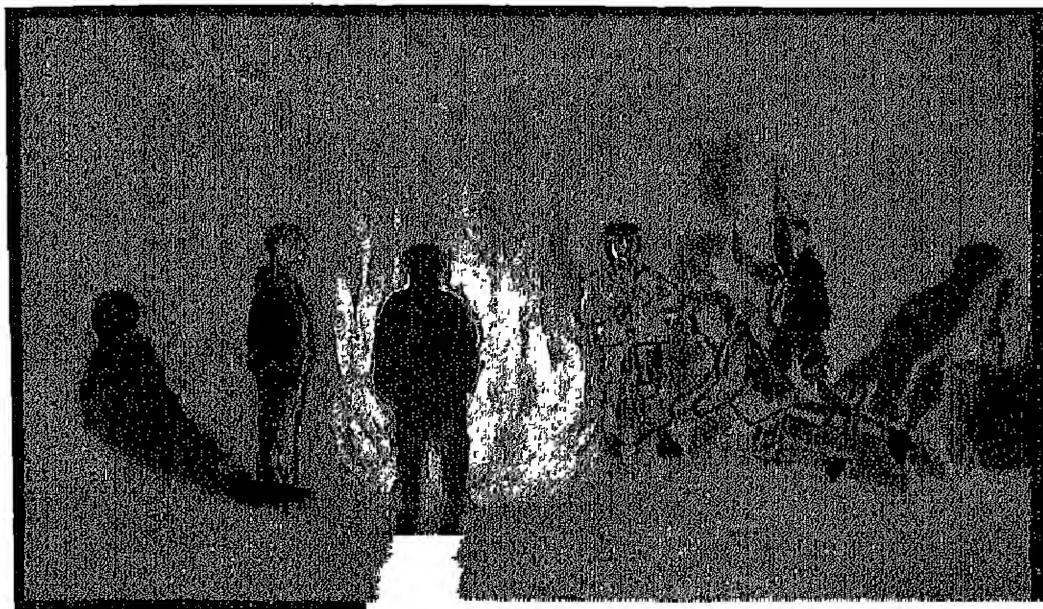


FIG. 4
The Camp Fire

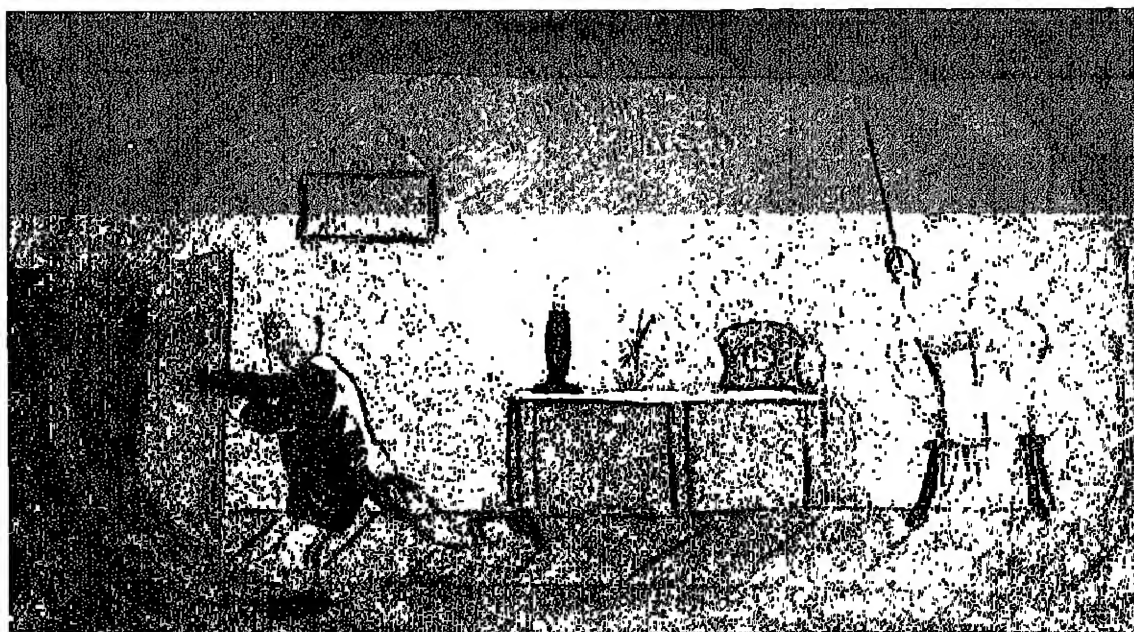


FIG. 5
The Ghost of the Manor
Painted in water-colour on toned paper.
These two pictures show the dramatic effect of light.

scholars no longer choose any colour that pleases them irrespective of its true value and its relationship to others. They not only gain a knowledge of "Families" and "Contrasts," but they think of colours in schemes, and every colour begins to assume a character. Green is not simply green, but they recognize all kinds of greens, varying in character as they vary in hue.

Possibilities of Line

Line is not so easily understood as colour. A really good pencil drawing is uncommon among the younger children, for line is subtle, requiring an intellectual appreciation for which they are hardly ready. A good foundation may, however, be made. The old method of "lining in" should be avoided at all costs. Even young children can appreciate the infinite varieties of which a B or BB pencil is capable. It may be thick or thin, continuous or broken, sharp or soft. Children at the age of 11 should have learnt to sharpen their own pencils in order that they may appreciate the different character given by a different type of point. This may be difficult in a large class, but it is worth while teaching even a few. The rest of the class will realize that the matter is important, and get some idea of the possibilities of a pencil as a tool. Having acquired some power over the pencil they can use a line with real significance. A line may be tranquil or infused with energy: a vertical line will be used to suggest stability, a horizontal line repose. The study of Nature furnishes the best examples, and in so learning from her we become sensitive to her varying moods and lay the foundations of an enduring pleasure. The gently flowing lines of the South Downs form a contrast to the rugged outlines of the Welsh Mountains. The long level stretches of cloud on a quiet evening enhance the feeling of serenity, while the large full curves of rapidly advancing cumulus are instinct with the life and vigour of the active day. Thus a line becomes not a mere transcription, as in the days of the old freehand copy, but a new source of power wherewith to express ideas. If, however, they are to be of any use these examples must be drawn from the child's own experience. Material will not be lacking in any environment.

If there are no hills in the neighbourhood, it is seldom that one cannot find a variety of trees giving endless opportunity for differentiation of line, and in a district so poorly endowed with natural beauties that even trees are lacking, something suitable may be found in the different styles of architecture. The uncompromising vertical thrust of the factory chimney is in a different order of ideas from the soaring lines of a Gothic spire.

Light and Shade

In the upper classes of the Junior School, when the scholars already have some experience, a need for still further differentiation of treatment will arise. Especially is this so among those children who, having a natural gift, have adventured further and on more individual lines than the others. These more advanced Juniors will be anxious to express some of the effects of light and atmosphere. The treatment of distance giving the emotional effect of space, and the dramatic effects of strong light in mysterious darkness, may be introduced at this stage, but the use of light and shade as a means of modelling to give relief needs careful study extending over a long period before it can be employed with any measure of success, and is more suited to the Senior stage.

Effects of Distance

An elementary idea of distance comes to children in the earliest stages, and one of the first steps taken in composition is the representation of objects in the distance as smaller than those near. As their powers advance, the children are likely to find the need for some knowledge of aerial perspective, and the subject may arise naturally out of their own unsuccessful attempts. By this time they should be able to take an intelligent interest in the work of some of the great artists, and in the formal lesson the teacher may well introduce them to the work of the space composers of the Umbrian Schools. Some of Perugino's landscape backgrounds and Raphael's open-air Madonnas are good examples easy to follow. Thus they will see how great artists have solved problems similar to their



AUTUMN



WINTER

Figures to fill a space, with colouring to suit the subject.



CATASTROPHE

Note the childish enjoyment in using many colours. This child draws with spirit, but the faces are all one type.

PLATE II

COLOUR SCHEMES EXPRESSIVE OF THE SUBJECT

own, and foundations will have been laid for the study of the History of Art.

A good means of obtaining these effects of distance is through paper-cutting, because this method is definite and direct. One piece of paper may be laid against another to see the effect before cutting and fixing. This gives ample opportunity for experiment without the confusion naturally attendant upon the repeated alterations probable if water-colours are used. A subject should be chosen involving a foreground, middle distance, and distance. Some misty river scenes are useful for this purpose, as they often afford a series of receding silhouettes, roofs seen from an upper-floor window make another good subject. A set of suitable coloured papers must be provided, and the children will learn to keep strong tones and colours for the foreground, and use the softer and greyer shades for the distance. Water-colours or poster paints are, however, better suited to the striking effects of artificial light. A point of light in mysterious depths of shadow, the dramatic effect so often employed by Rembrandt, does not necessitate clear edges and direct treatment. Soft edges and the many gradations of tone, which add to the mystery of the shadows, come fairly easily to the pupil's not too skilful brush. Such subjects as "A Camp Fire," "The Night Watchman," or "A Torchlight Procession" will be painted with delight.

Story-telling

The teacher's objective will be to obtain illustrations full of character and expression. It is not, however, only the substance of what is taught but the manner in which it is presented which will produce the desired results. This depends much on the individual teacher. A story may be told with intonation so lifeless that no pictures are called up to the child's mind. The Art teacher may, with advantage, study the art of story-telling, but it is often better to read the actual words of the original story, for if good literature be chosen the descriptive words of the author are likely to be more terse and vivid than any extemporaneous version. *Grimm's Fairy Stories* provide a good

example. In the story of "The Five Servants" what a mental image of the man of extraordinary vision is conjured up!

The next thing they saw was a man standing, stretching his neck, and looking round him from hill to hill "What are you looking for so eagerly?" said the Prince. "I have such sharp eyes," said the man, "that I can see over woods and fields and hills and dales—in short, all over the world."

Inspiration from Music

Some teachers have found music a useful means by which to excite the imagination, but this method has not been thoroughly explored, and needs further experiment before it can be taken up at all generally. A short and tuneful melody should be chosen, and it must be played with feeling and character, so that a clear impression is left. It must not be too varied in character, for it is impossible to depict several impressions at once, though in one case when a piece of this type was played the children got over the difficulty by making a series of pictures. It is not only the melody but also the character of the harmonies and type of instrument which influence the result. After the tune has been played once or twice while the children listen in silence and with their eyes closed, they at once draw and paint the pictures that come to their minds. In the treatment of illustrations so produced similarities occur more in colour and tone, and sometimes in the rhythms of the lines, than in the subjects chosen. Such teaching cannot, of course, be attempted by the unmusical, nor must too much be expected from the method, which presupposes individual gifts.

Varying Ability of Children

To some children expression is natural, they have an instinct for selection, and they feel and think so vividly that they go straight to the heart of the matter, and irrelevant details are ignored. These are the gifted of the class, but the average and backward children need to be led with patience and sympathy. Gradually as their illustrations gain in expression their drawings will react on their minds, they will begin to feel more vividly as they work with greater freedom.

FIGURE DRAWING

In the previous pages attention has been directed to expression, but there will be no advance in standard and no really expressive drawing unless the children are taught to observe, and to do this with the freshness and curiosity peculiar to their age. We have already spoken of the study of line, and of colour and atmosphere as parts of picture making; but figure drawing and linear perspective require



FIG. 6

Figure Drawing by a Child aged 11

This figure has proportion, action and expression. It represents the maximum of achievement that may be expected from a child of good ability in the Junior School.

special lessons, and must be dealt with as separate subjects. According to the old school of thought, frehand and model drawing were believed to be the basis of all teaching, and figure drawing was not to be attempted till the pupils had reached an advanced standard. It was not realized that the powers of observation could be better trained through figure drawing than through any other study, for the human form is more attractive through its variety,

beauty, and expressiveness than any manufactured object. With some knowledge of the figure and of colour, delightful illustrations can be made before the pupils have any idea of perspective. It must be remembered that the Primitives and Eastern nations produced art of a very high order without this help, and that the scientific study of representation belongs to a later stage of development. The use of the human figure would seem then to be in harmony with the child's early instincts, and its study should be approached through a knowledge of its proportions, movements, and rhythmical lines, rather than through knowledge of its construction. Children will first treat the figure as a silhouette, gradually introducing the structural element as they gain some knowledge of perspective.

Observation and Models

The early drawings of infants are symbolic: they are content with lines which give a summary of the main divisions of the figure, sufficient for them to be recognized as human beings. The usual symbol consists of two circles representing the main parts of head and body, with mere lines for arms and legs. It would be interesting to understand the origin of this universal pictograph. The circles and lines are probably used because they are the quickest way of enclosing a mass and of representing the long extensions of arms and legs. A child when asked to do the arm-line with a sleeve, immediately drew an elongated circle round this line.

If no help is given these symbols may persist even at an age when the child himself knows them to be absurd. "Do you draw figures?" a little artist of eight was asked. "No," he said, but then added, "I do sometimes but they are so silly." Up to this time he had used the old symbols, but, his attention having been drawn to the proportions and clothing of a man, in half an hour he produced a profile drawing of a man walking, with trousers, and a coat having reverses and collar. Children will make their figures better in shape and proportion if their attention is directed to the clothes. The mere attempt to represent the difference

between a boy and a girl brings some shape into the body: knickerbockers and boots give solidity to the legs; a collar suggests a neck; and the growth of the hair shapes the face. The children begin to study one another, and attempts to represent the clothes of particular members of the class bring more character into the work, they begin to relate their drawings to real figures, and the symbolic stage is left behind. Even the preparatory classes may draw each other; but, as they cannot at one and the same time give their attention to observations and to their drawings, it is better that they should always draw from memory.

Every member of the class will not, of course, be able to get the same view of the model, but this may be turned to advantage, for the children must learn to put down only what they see—not, for instance, the whole of both legs if they see only one and a part of the other. As they look at each other's drawings they learn to realize that each drawing must be an individual record of particular experience. They will sometimes draw a side view, sometimes a full view, and sometimes a three-quarter view, and will learn to notice the varying amount of the figure they can see in each. Drawing from the figure itself should be continued throughout the course, but apart from this there are several good methods in use which help to secure better proportions and more correct and easier movements by substituting a more useful convention for the old childish symbols.

Match-stick Figures

The best known of these is the "match-stick" drawing. With the help of these little figures children can learn the proportion and proper jointing of the limbs, and can represent various attitudes such as walking, running, kneeling, throwing, etc. Care must be taken to make this convention sufficiently like the real skeleton to make a good foundation for future work. It is wise to include a line for the shoulders and a triangle for the pelvis, for drawings which make the arms and legs spring from a point are difficult to deal with later, and give rise to inaccurate construction. The pupils should be encouraged to differentiate between the side view and the front view. The former should show the inclination of the axis of the head, and the shoulder line, being foreshortened, should be omitted, while the feet should have their full length. Thus some preparation is made for the study of foreshortening. These figures are stiff and apt to move with the precision of waxworks. To prevent this a different type of line may be used for the backbone instead of the straight one employed for arms and legs; this



FIG. 7
Match-stick Figures
(Drawn with a match
dipped in ink)

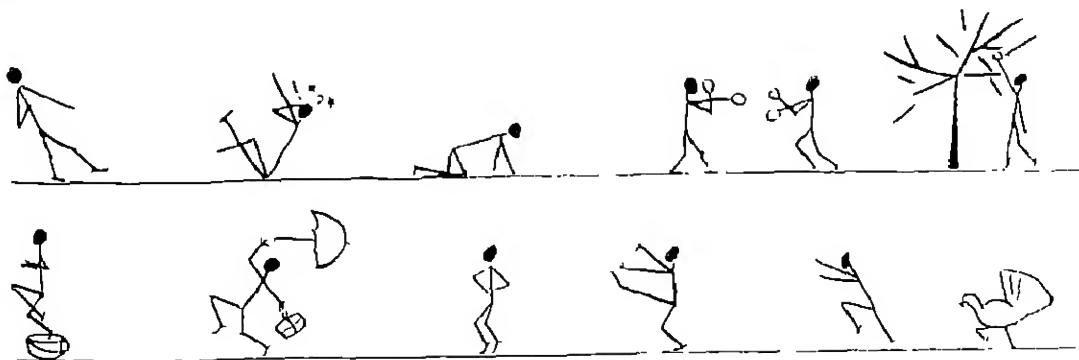


FIG. 8
Match-stick Figures

will help the children to realize the flexibility of the spine

Paper-cuts

The use of oblongs cut out in black gummed paper is a method which is advocated by Professor Rothe. These paper-cuts give solidity to the figure from the first, and the oblongs make a very fair representation of a man

view, and that at shoulders and hips, respectively, the pairs of oblongs forming the arms and legs must overlap. This is a very natural introduction to silhouette drawing from the real figure

There is no reason why both these methods should not be used side by side. The paper-cut, though preferable in some ways, cannot be done in odd minutes, neither can it show the flexibility of the spine, for as soon as any

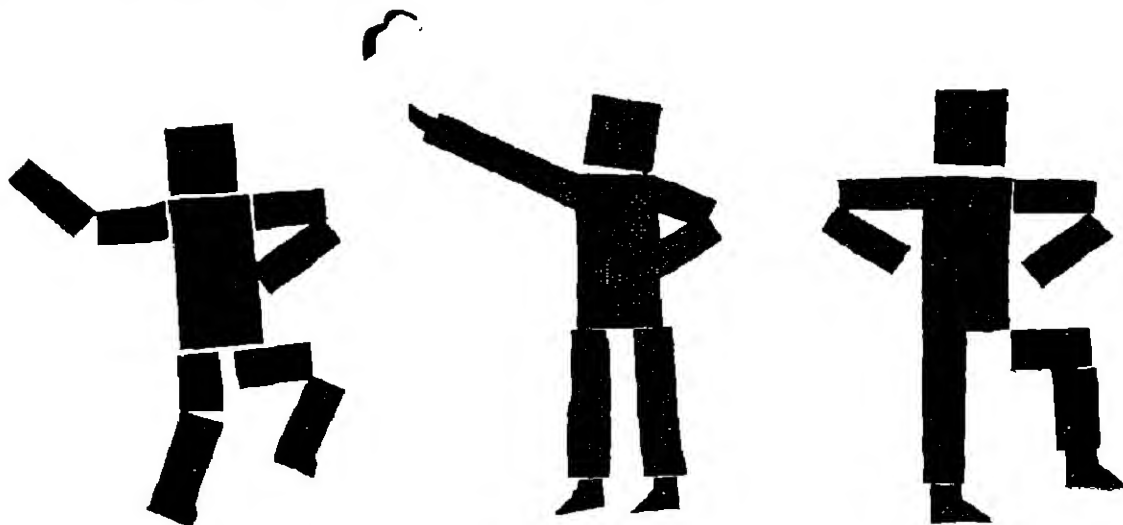


FIG. 9

Figure Paper-cuts

in coat and trousers. Extra bits of paper will make accessories such as hat and stick, and a more realistic and decorative picture can be made than with the match-stick figures. The children can experiment with the bits of paper before they stick them down, and find that they have a new and interesting toy. After cutting the paper up into the requisite parts a few times they become familiar with the proportions and will, when drawing, no longer make the old mistakes of large head and short legs. The shaping of head, body, and limbs should advance by stages, and the differences between side and front view can be clearly shown. In making the side view the children realize that the head must be placed in advance of the body, that the body itself appears less wide than in the front

attempt is made to represent the bend or foreshortening of the body really advanced work is being attempted, and considerable knowledge of drawing is required in order to cut the paper into the required shape.

Cardboard Models

Some teachers teach their pupils to make little jointed cardboard models like flat lay figures. These serve as toys which they can move into various positions, and so help themselves to get the poses of the figures they wish to draw. As this method takes longer than the other two, it will not be worth doing unless care is spent on shaping the body correctly. The children will take great interest in making

something that they are going to use, and the time spent will be justified because they will remember the shape and proportions. This little flat figure moving in one direction only is, of course, as limited as the others, indeed it is more limited because it takes longer to make, and cannot, therefore, be so easily altered

Advantage of Living Model

All these conventions have greater scope in the profile view, which is easier to the scholars, but their figures will remain awkward and unreal unless they attempt the difficulties of the three-quarter view. Thus painting or drawing from the living model must not be neglected, and the aids to drawing which have been described must be used sparingly. It is better for the children to make faulty attempts at foreshortening than to form the habit of avoiding it.

Finding Right Proportions

It is well worth while to give some help with the proportions in the early stages, for this will make a marked improvement in the childrens' drawings. Three important measurements will be enough at first as insistence on accurate detail is only confusing. Large heads and small legs and arms are the most common faults. These can be put right by allowing the children to measure each other.

In many Greek figures the head is one-eighth of the whole, but for adults of our own time one-seventh is more accurate. The Greek proportions do, however, form a very convenient working measurement for the paper-cut method, as it is easy to find by folding the paper into halves and quarters. Having some idea of the correct size of the head the children can use it as a unit of measurement, and compare with it the size of hands and feet. The face and position of the features may be dealt with in a special lesson, which must not be put off too long, as the inability to draw the face discourages the pupils, who, knowing that the faces they have drawn are ridiculous, draw funny figures to match. Some teachers show their children how to draw a typical face with definite proportions. There is no harm in this "type face" if it is made

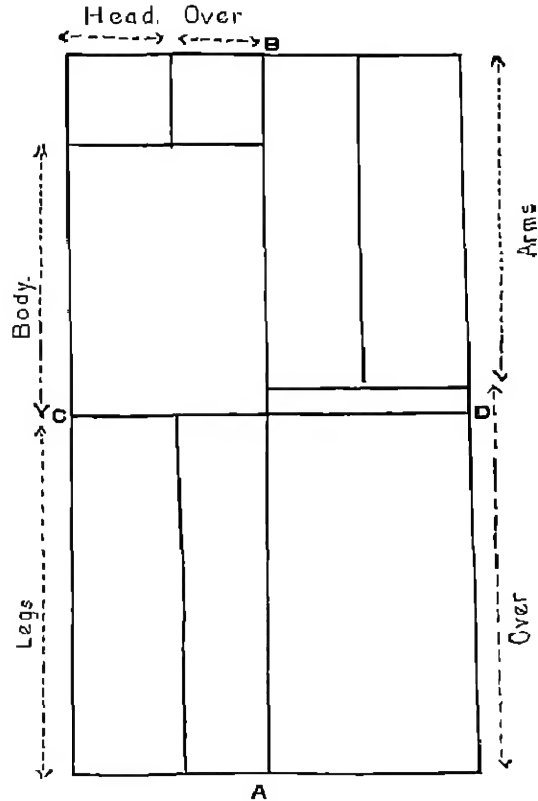


FIG. 10

Diagram for Paper Cut-out of Figure

To every other child give 1 sq. of black paper
Direct to cut in half and give half to neighbour.
Each child has an oblong = half square
Divide in half at *AB*, left piece for body, head,
and legs; right piece for arms
Divide these pieces in half again in the opposite
direction along *CD*

If it is allowed that the middle of the figure comes at the hip joint, the oblong to be used can first be divided into two halves, the one for the body and the head, the other for the legs. Measurements nearer the children's own proportions will be arrived at if the leg piece is made slightly longer than the body piece. A division of this shorter body piece into quarters will produce a head which will go eight times into the whole. These measurements will serve to form a type from which the children will learn to deviate as they wish to make their figures tall or short. They must learn the average width of the figure, as this also will affect the apparent proportions; a fat person will appear shorter than a thin one of the same height.

a standard of comparison from which to obtain individual character by altering the proportions. But it must not be allowed to become the one and only face drawn by all members of the class. This is a danger, especially to clever children, who having once learnt to make a pretty face repeat it with satisfaction in all their drawings. They may, for instance, represent the school playground or sports-ground with twenty figures all members of the same family! This will be avoided if more praise is given to

The eyes will be found to come mid-way between the top of the head and the chin, and the width of an eye will serve for the space between the two. The position of the tip of the nose varies greatly according to whether it is a long or a short nose, *retroussé* or *aquiline*. This point is of equal importance to the position of the eye, as the shaping of the profile will largely depend on it. When the eyes have been placed, and this is easy as it involves only division into halves, the space below can be halved again.

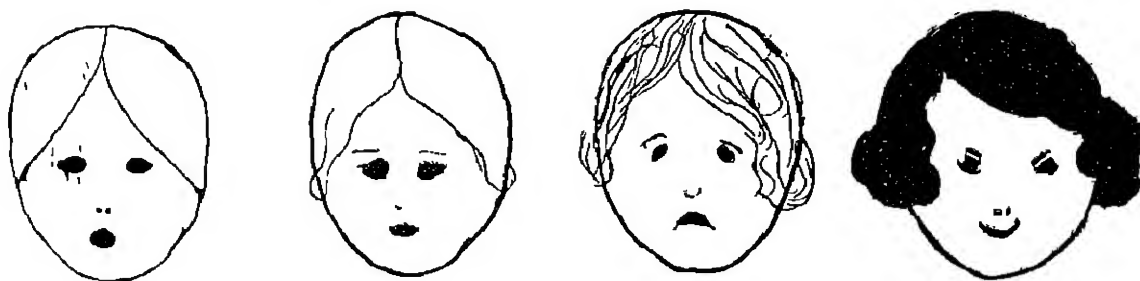


FIG. 11

Drawings of a Face by Junior Pupils

These faces show fairly correct placing of the features and a first effort to get expression, but note the mistaken slope given to the eyes in the last two.

drawings with character than to mere pretty faces.

As faces vary, it is obvious that this "type face" which we are trying to establish might vary in different schools. It is best that the children, with some help, should make it up for themselves, for all teaching must be directed to showing the pupils how they can find out and establish principles from their own experience. As it is easier to measure from the flat than from a real head, some good drawing, picture, or photo may be taken from which to derive the standard measurements. The front view is the simplest in general form, and its outline may be founded on the egg-shape generally used in match-stick drawings, or on a diamond, which makes an easy basis for the paper-cut. The first investigations should give the width of the head relative to its length, and the position of its widest part. This will give an outline approximating to that of the human head, within which the features may be placed. These may first be suggested by dots and then by dots and lines.

and the size of the nose made a little less than the space so given, that is, a little less than a quarter of the whole. Eyebrows and mouth can be added without further measurement, and the children will be ready to try to individualize their faces and to get expression.

Facial Expression

First experiments can be made in altering the proportions. Noses, upper lips, chins can be long or short; eyes can be large or small, set far apart or close, foreheads can be high or low. Children in the class can be compared with each other and with the "type," and the pupils will learn to attach definite meaning to a long nose, large eyes, wide mouth, etc., and so will be more likely to get a likeness when trying to draw portraits. Variation in the tip and character of the lines will give expression. The curve of the mouth may slope up or down, as it is meant to be sad or gay, the eyebrows may be straight or oblique, they may come together

in a frown or be raised in surprise. The growth of hair may also be studied, for it is surprising to see how a variety of wigs may entirely alter the face of one person. Much useful fun may be had by merely playing with these little straight lines, and the faces in the illustration should become more expressive, though the actual complicated shapes of eye, nose, and mouth will only be learnt gradually, and that chiefly through drawing from the model.

Profile Paper-cut of Face

When drawing the face in profile the children must learn to base the shape on that of the skull. It is easier to construct this view from the square



FIG. 12

*Profile from a Tracing of the Famous
Portrait of a Lady by Pollaiuolo*

than from any type of oval, and the general shape can be rapidly formed with a pair of scissors from a square of paper. As before, a picture may be used for purposes of demonstration. Children are apt to base the profile on a vertical line, not observing the angle formed by lines drawn from the tip of the nose to the chin and to the top of the forehead. They may learn how this angle varies in different races. From

their previous knowledge they should be able to fix the point of the nose, and can then snip off the two lines of the angle with their scissors. Next they must find that the back of the skull is on a level not with the top of the chin, but approximately with the tip of the nose, and lastly that the neck slopes in such a way as to bring the head in front of the body. Features must now be added.

The position of the eye is already known to be about half-way down the square, and can be put in when the slight adjustment which is necessary to the shaping of the brow has been made. The position of the ear is rather nearer the back than the front of the head, and its length can be compared to the distance between the eyebrow and the tip of the chin. As before, the more detailed shaping of the features is best learnt when drawing from the model.

These "type heads" must not be too small, or inaccuracies will occur. Mistakes are easier to see and correct if the heads are of a fair size, so the original piece of paper should be not less than 2 in. square. Though all these directions may sound elaborate, the drawings will not take very long, for only a few simple proportions are insisted on. Each child should make a full-face and a profile view for reference: first in black paper to get the general shape, then in pencil to give the features.

Profile Portraits

The black-paper profile provides an obvious opportunity for making silhouettes, like those charming portraits of our grandmothers' time.

It is possible to trace such portraits on the wall over the shadow thrown by a candle, and such tracings do the children no harm if forming a relaxation from the rather severe discipline of these studies in proportion. Indeed, they help the children to form some idea of the varying characteristics of profiles. For though the general outlines and proportions are simplest in the full-face, the actual drawing of features and representation of character are easier in the profile. Very successful experiments in characterization have been carried out by schoolboys, who have drawn imaginary portraits in connection with their studies in Literature and History,

and there is no doubt that in whatever way the drawing of the head is approached the aim should be to get this characterization. The class may also with advantage be introduced to the beautiful and piquant profile portraits of the Italian Renaissance, which they will understand and appreciate all the better on account of their own attempts, while these attempts will become

Observation and Memory

While the pupils are drawing these illustrations, the teacher can do much to encourage their observation. Children may occasionally get their companions to take certain poses for them, or, better still, if there is a mirror in the room they can themselves pose in front of it.



FIG. 13

Shut-eye Drawing by a Child aged 11

more beautiful through the influence of the Italian masterpieces.

Utilizing Figure Drawing

The lessons in working from the model described above belong to the early stages, and are only suggested for occasional lessons with the object of relating the imaginative drawings to reality by showing the children how to observe so that they may study the figures round them, both at school and at home, and through their own efforts improve the figures in their illustrations.



FIG. 14

Open-eye Drawing

The answer to the question, "How can I draw this?" will often be, "Look and see." The figure lessons will teach them how to "Look and see," and will be needed more and more as they grow older and capable of more intimate observation. From the posed model they will learn the general pose and action of the figure, and the detailed drawing of the different parts of the body. The first is best learnt from memory, as the more dramatic the action the more vivid will be the drawing, and the model can keep such poses for only a few minutes. The artist must visualize the pose and draw from the mental image. It is better to trace round the

mental image with pencil on paper than to make the tracing in the air. In both cases the drawings are made with eyes closed, but in the first the action is made more definite, and the pupils can afterward examine what they have done. These "shut-eye" drawings will naturally be laughable, but are often extraordinarily expressive. They also give unity to the figure,

importance of this can be explained to them in a lesson from a pose which can be kept long enough for them to puzzle out the two or three leading lines upon which they can construct the whole figure. Such poses as sitting on a chair with head bent forward, or sitting on the heels in a kneeling posture are easy for a beginning. It is important that the main line should be simple, flowing, and



FIG. 15

Paper-cut Figures

Note the rhythmical unity of the brushwork drawing (Fig. 16), which it was not easy to obtain by means of disjointed paper-cuts (Fig. 15).



FIG. 16

Brushwork Figure

and cure the disjointedness produced by the match-stick and other conventions. They are not, of course, final, but only preparatory to drawings made with the eyes open.

Rhythmical Unity

The young artists should now be sufficiently advanced to appreciate the rhythmical unity of the lines of a figure, and to draw the figure as a whole instead of making it up limb by limb. The

easy of observation. Having once understood what is expected of them, the pupils can apply the method to active poses, such as dancing, throwing, hammering, which can be held only for a minute.

Constructive Lessons

For detailed figure drawing twenty- or thirty-minute poses will be sufficient, for in the Junior School it is better to do a good many drawings

than to take a long time over one. Progress will be made if the teacher plans a careful series of lessons, taking important points one by one. One lesson, for instance, may be directed to the drawing of the leg, the position of knee and calf, and the joining of foot to leg by the instep; another to the poise of the head on the shoulders; and a third to the lifting of the shoulder with the arm. Plenty of material will be provided for such lessons by studying the faults in the children's illustrations. Some faults can be passed over till a later time, but others are obviously detrimental to the expressiveness of the drawings, and must be dealt with at once.

Posing the Model

Before giving a lesson the careful placing of the model must be thought out. The model must be posed high enough and far enough away for the scholars to see it without strain. In some classrooms this is impossible, and if the class cannot be taken into the Hall the drawings must be made from memory, so that some of the children may stand up while they are

observing. In the Hall the children may be arranged round or on either side of the model, so giving a good view to the greatest number possible. By this arrangement, however, the opportunity of arranging for a plain background behind the model is sacrificed. This plain background may be formed by the wall of the classroom and, if there is nothing on it to distract attention, the scholars will see the figure distinctly, their minds will be concentrated upon it, and they will find it easier to draw. If, however, the background be made from a sheet or screen there will be, perhaps, a loss of plain space, but a compensating gain in the straight boundary lines which will form a standard of comparison with the curves of the figure. This comparison is still easier to make if the sheet forms a frame completely filled by the figure. An open door or a window may sometimes form a good background. In this case the figure is silhouetted against the light; the children will get a clear impression of its mass and outline, and may cut it out in black paper or fill in the outline drawing with a brush.

ILLUSTRATION AND PERSPECTIVE

The present age is scientific and mechanical, and more scientific study and constructional drawing underlies the work of modern artists than is generally understood. It is, then, not unnatural that the modern child, curious as to how things come about, should be interested in studying how to represent a solid object on a flat surface. But any technical teaching can be closely related to the child's own work, and come about through his efforts at illustration. In this way the decorative character and spontaneous nature of the drawings need not be sacrificed. Observation of the appearance of things can be taught without insisting on mathematical precision or confusing the pupil's mind with a number of rules. Drawing from the object is not so fascinating as drawing from the figure, but if made part of the wider pleasure of picture making the interest will grow. The importance of space-composition, and the possibility of expressing it through colour or tone have been already suggested. The earliest lessons

in perspective may be directed to expressing distance through drawing. The fact is simple enough for the merest infant to grasp. Things near are large—things far are small. The application is not difficult. Let the children draw a row of trees spaced across the front of their picture, then let them add smaller ones in between to represent a more distant row. The fact will be even better understood if the drawing can be made on the blackboard, the alternate trees being rubbed out and smaller ones substituted. The answer to the question, "How can we make the tree look farther off?" will have been demonstrated. If it is pointed out that the tree must be made smaller at the bottom as well as at the top, one of the first difficulties will have been avoided, and the tree will appear to be really in the distance instead of merely smaller. If, happily, the classroom should look out upon trees a convenient window may chance to frame just such a picture as we need. The near tree will reach from top to bottom of



PLATE III
THE RACE

The child's power of drawing depends on interest. Some children can draw horses better than the teacher. This child is, however, above the average. Note particularly the foreshortening of the horse on the left, and the clever summary of the crowd, giving an excellent effect of distance.

the frame while the farther ones will make secondary groups occupying less space. In this way perspective has helped the composition. Roofs and chimneys can also be observed through the windows, and then sloping lines be compared with the verticals and horizontals of the frame.

Converging Lines

Railways, tramways, and streets can now be studied as examples of converging lines, and posters and photographs may be used for class demonstration. There are sure to be plenty of examples at hand; even the wall of the school playground may be long enough and high enough to serve the purpose. The children may also with profit make tracings of the main lines of buildings in photographs or in post cards. This will serve as an introduction to the study of linear perspective later. The formation of certain habits at this time may save much trouble later, as faults repeated till they have become bad habits are difficult to eradicate. The high horizon with the steep path converging toward the top of the picture is a common instance. It is quite permissible for a time to dictate the height of the horizon, and to suggest that the path may cross the picture diagonally instead of cutting it into two halves as is usually the case. This may not be accepted as the final arrangement, and the children must learn to see how a high horizon will serve them best to express hilly country, while a low horizon is suited to flat country, and will suggest space. All pictures require thought: a habit, if too long persisted in, can never be "good."

Illustration Introducing Perspective

A knowledge of perspective may be built up gradually by a judicious choice of subjects for illustration. They may be suggested by school or home life, or they may be chosen from Nursery Rhyme or story. Rows of children in their desks or drilling in the playground offer excellent exercises in perspective. Corners of the building and views of roofs from the window can be made into good picture compositions, and will not fail in interest if carried out as a paper- or lino-

cut. Little Jack Horner must have his corner, and the pie-man is useless without a tray—and, more than this, Jack must sit in his corner without sliding down, and the pie-man's tray must hold the cakes. Children who are interested in figure drawing may be utterly careless of objects until they find that their figures cannot sit upon their chairs. Then they will

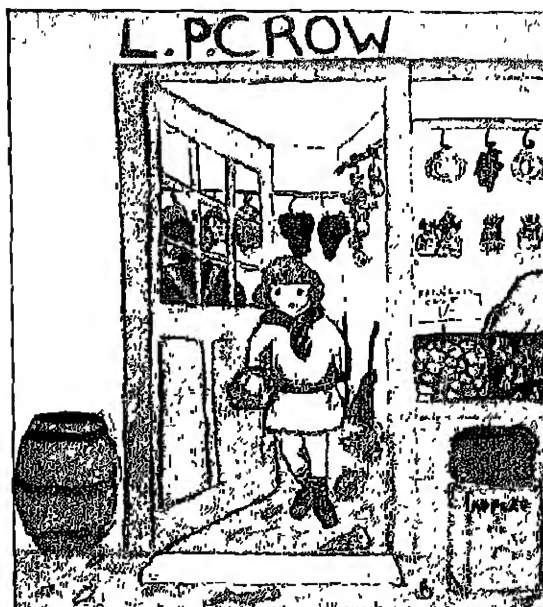


FIG. 17

*Drawing, by a Child aged 11, involving
Illustration and Perspective*

make the effort to make the tipsy furniture stand upright.

Pictures may be made in which the object forms the principal part. Large objects are easier to observe than small, and the children must have had some introduction to perspective before they attempt the more difficult objects such as tables and chairs. An open door forms a good subject for an early lesson. As it is open it is easy to compare its new shape with the rectangular frame which it formerly filled. In most classrooms there are sufficient doors for comparison—the door itself, the cupboard doors, and perhaps the casement windows. If

not, demonstrations can be made with portfolios. "The Knave of Hearts, he stole those tarts" might be chosen for illustration, and the knave described as peeping round the door, watching the making of the tarts. The Queen will not be included, as all time and attention must be given to the door. The children may try to suggest the presence of the tarts by the expression of the knave's face. The frame of the door having been drawn as a rectangle, the children observe the different appearance of the door when open. The observations having been taken, the children draw the open door, put in the knave, and colour their pictures. There is no further pause in the lesson, the children must not all wait to finish the illustration till their drawings have been corrected. The incorrect results may be a disappointment to the teacher, but at any rate in the Junior School creation is of the first importance, and nothing

is more hampering to the inventor than to be forced to wait until the drawing is approved. A certain number of children will get attention, and something may be learnt from criticisms at the end. The subject will recur in a later lesson in another form, giving a further opportunity for teaching, and the teacher must take note of backward children so that they may be given more individual help.

Inspiration Not to be Sacrificed

It is only too easy to lose all the spirit and inspiration in an illustration which makes the perspective of first importance. Some children of eleven who were illustrating *The Brave Tin Soldier* chose to draw the goblin jumping out of the box. Though they made excellent drawings of the box, their goblins were without spirit and utterly insignificant.

TOOLS AND MATERIALS

Some of the Education Authorities are more generous with their supplies of materials than others, because they realize that results depend partly on the use of right materials. That "a bad workman complains of his tools" may be true, but it is true also that a good workman is particular about his tools. Children should be taught to understand their tools, and to appreciate the varied possibilities of the materials with which they work. To do this they must have some experience of more than one instrument in order that they may compare one with another; they must know that they can achieve with a brush what they cannot accomplish with a pencil. Drawing and painting are crafts just as bookbinding or carving, and if they were more often thought of in this way more consideration would be given to the tools employed. Pencil, chalk or pastel, and water-colour are all suited to the Junior School, and the three will not prove confusing if at the beginning a short series of lessons is devoted to one medium before the next is tried. In the later stages it is good for the children to be able to choose their own medium.

Lino-cuts and paper-cuts are especially suited

to the teaching of composition and design, and will be treated under those headings.

Pencil

Pencil as an instrument with which to make drawings showing delicate beauty of line and tone belongs rather to the Senior School. But in the Junior School it is most handy for making notes and quick sketches and the outline of drawings to be finished in colour. For this purpose a pencil should not be so hard as to require much pressure; it must respond easily to the hand and give variety of tone, so that the Juniors may learn to handle it lightly and sympathetically before they pass into the Senior School.

Chalk or Pastel

Like the pencil, chalk is easy to handle, and does not require all the preparations necessary for water-colour. It is, however, a clumsy instrument and difficult to sharpen; its use may lead to habits of inaccuracy. It is impossible to express the details of a small face with a blunt

piece of chalk, and the children are forced to draw large ungainly mouths and characterless noses. Colour matching with chalk is difficult and, unless a greater variety is supplied than is possible in school, the matching is bound to be inaccurate. Chalk is, therefore, best suited to the earliest illustrations of young children because more easily handled than water-colour. The drawings should be large enough to suit the bluntness of the instrument, and the colours should be used decoratively. As it is difficult to superimpose one chalk on another, or to finish one edge neatly against another, it is better to leave backgrounds untouched until they can be treated in water-colours. Chalk pencils may be used in much the same way as ordinary pencils, as they can be pointed and do not smudge easily. They are more attractive to small children than pencils because they have colour. A black chalk is, however, a very good substitute for a pencil, as it is more vigorous (see Fig. 3).

Water-Colour

The brush is more flexible and, therefore, a better means of expression than pencil or chalk. Though the craft of water-colour is more difficult than that of chalk, it is worth the trouble which must be taken, as it has far greater possibilities, and in the Junior School a foundation may be laid for really good work in the Senior School. Water-colour is also the best medium for the study of colour, as a few water-colours give a much greater range than a few chalks. Water-colour will, therefore, in spite of its difficulties, tend to greater accuracy both in drawing and matching.

A series of lessons on illustration must be so arranged that the technique of water-colour may be logically developed. These lessons will fall naturally into two sets, the one helping the children to draw with the brush, and so use the tool expressively, the other showing them how



FIG. 18

Child's Water-colour Painting of Lighthouse during Storm
Note how the vigorous brushwork conveys the impression of movement.

to paint washes. Good water-colour paintings are a combination of these two methods. In order to develop good direct brush-work the pupils may make some brush drawings in outline, learning to vary the line through pressure, and to secure a curve with a turn of the wrist. They must on no account be allowed to build up a line with a number of touches. An illustration of an aquarium makes a useful lesson for this purpose. A little tadpole with its fat head and twisting tail can be formed with one sweep and twirl of the brush, and can be made to dart about in all directions; the snails creeping along the bottom of the tank need larger, fatter strokes and their shells give further opportunities for curves; pond weeds can be swept upward from the roots; and finally the water is represented by a covering wash with a few horizontal lines drawn across. Subjects for washes are plentiful. In painting skies or seascapes pupils can learn to put on a graduated wash, to run varying colours together as in a sunset, or to dab out clouds with a soft rag. These landscape and seascape illustrations form an introduction to sketching, and give useful opportunities for observation. The picture must not be dictated by the teacher, and the subject must be suited to the neighbourhood so that the pupils may have opportunities to observe in preparation for the lesson, and opportunities of making sketches for homework after the lesson.

Poster Colours

Some teachers advocate the use of poster colours instead of water-colours, and the choice of medium must be partly influenced by the bias of the teacher, whose enthusiasm and understanding of the particular medium in question will undoubtedly help to carry the class over the difficulties. Poster colours are more easily altered than water-colour; they can be used more decoratively; and colour matching can be taught at least as well. The difficulty of equipping a class may be overcome by buying the colours in large glass pots, which are much cheaper in proportion than the tubes. These pots can be placed in a row on the table, and the children can help themselves to a little as they need it. They have the advantage that the

colours are clearly visible through the glass. If the teacher is afraid to trust the children to help themselves, a pause may be made in the lesson when the children have decided on the colours they need, and a distribution may be made with the help of a few of the more careful pupils.

Water-colour Equipment

For water-colour painting two brushes should be provided for each child, one for washes, and the other for finer work. The provision of two brushes is also economical as to paint and cleaner in execution, as it is not then necessary to wash the brush every time a fresh colour or clean brush is required. Sizes 10 and 7 are satisfactory for the purpose. Children are seldom provided with sufficient palette room. Without it their colouring is likely to be dirty, and they will not learn to charge their brushes fully, for they will not have enough room to mix sufficient paint. The usual tripartite palette and small paint-box are insufficient, but these may be supplemented by a collection of old plates and saucers or even tins. One ingenious teacher provided her class with large shells collected on the beach. Children can bring bits of rag, though a small piece of butter muslin might be provided for the more careful pupils as it gives better effects in wiping out. With a jar of water for each child and a pail of water in which to wash the palettes as needed, the equipment will be complete. If paint-boxes are provided one should be allocated to each child. Each can then learn to take care of the box, and will not be hampered by the muddles made by the child who used it previously.

Paper

Pieces of paper are better than drawing books because the size and quality of the paper can be varied to suit the subject of the illustration and materials used. The children must learn to select the size and shape of the paper for themselves, and cutting out and mounting drawings is an important part of the teaching of composition. The pupils should be encouraged to make quite large paintings and drawings. In the International Exhibition at Prague back in 1928 the

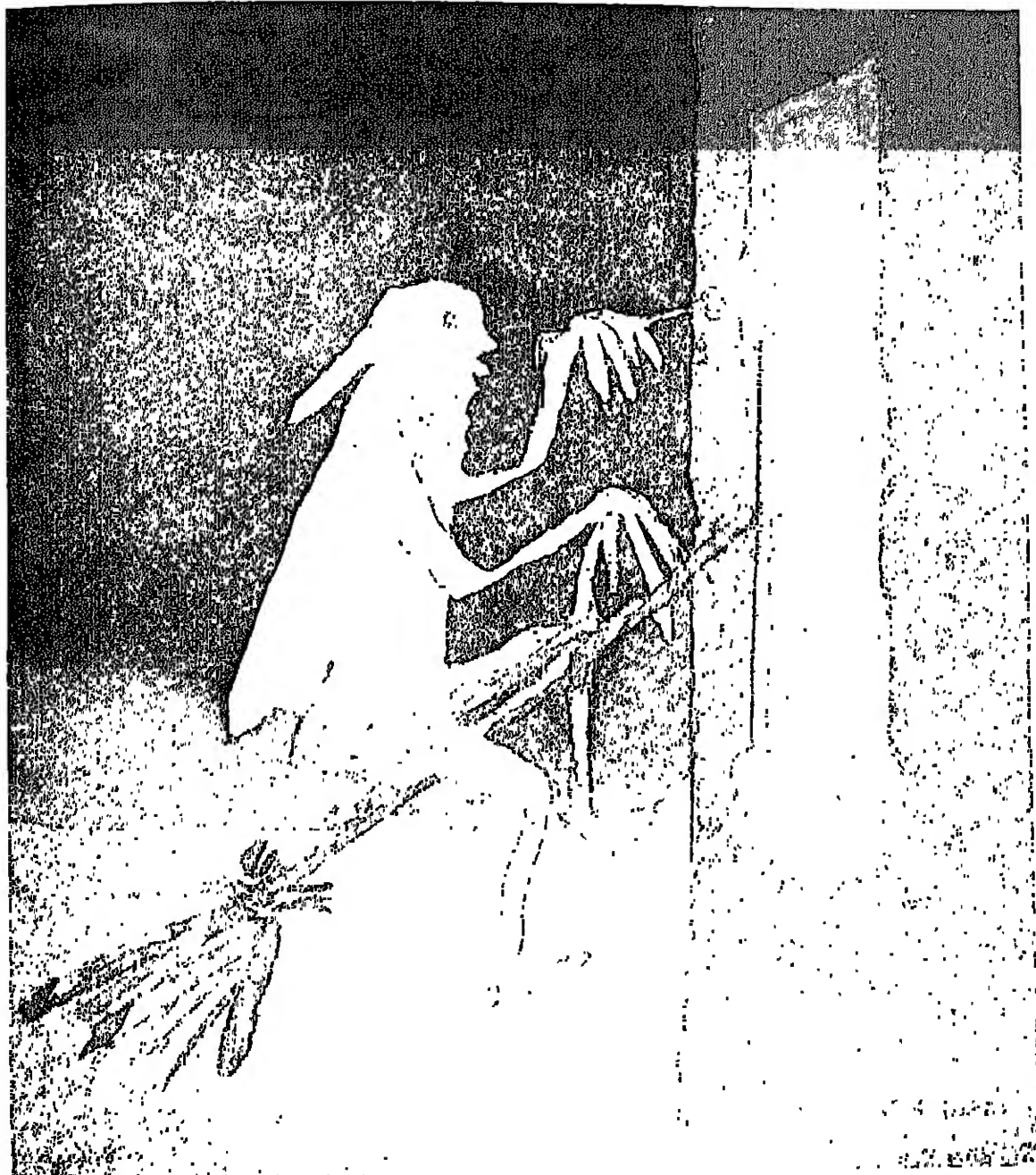


FIG. 19

"Jack Frost" painted in Water-colour on Toned Paper by a Child aged 8

most striking drawings by the younger children were nearly all of a large size, that is from half to quarter imperial. Children begin to draw quite naturally with the arm, and it is a pity that they should be discouraged. They can draw quite well standing at the desk or kneeling on the floor to get a command over their work. Kitchen paper or ceiling paper is cheap and good for these large drawings. The outline may be made in brush or charcoal, and the colours washed in with a large brush. For ordinary purposes a thin cartridge paper will suffice for pencil and water-colour, and cheap coloured papers for chalk, but some good stout cartridge should be stocked for the better water-colours and also a little good chalk paper. There should be plenty of scrap paper, as the supply must not be stinted, and it will be required for experiments of all kinds. With a little trouble teachers can collect this from various sources. The wrappings of parcels will provide stout coloured

papers. A kindly draper can be persuaded to save the white strips of lining paper out of rolls of ribbons, and sometimes a great variety of waste paper of excellent quality can be obtained from publishers' offices. Old pattern books of wall-papers are also useful. With a little ingenuity no teacher should be short of paper.

Teacher's Practical Experience

Although it is possible to provide plenty of paper, paint, and chalk good enough to produce satisfactory results, these results being partly conditioned by the materials, teachers should practise with, and become accustomed to, the materials supplied to the children, for unless they do this in preparation for a lesson they cannot know what results they ought to expect, nor are they able to help the pupils to meet the particular difficulties occasioned by the paper or medium supplied.

CHOICE OF SUBJECTS

The choice of subject considered in relation to the pupils' general development will fall into two main groups. (1) Subjects chosen to give opportunity for invention and creation, and thus develop the imagination and personality of the young artists; (2) subjects chosen to lead them to observe and interest themselves in the life around, thus giving greater significance and better execution to their drawings. In both cases the children's environment must be taken into consideration, for imaginative work must be composed from the storehouse of experience, however the materials may be arranged. If, however, the contents of their pictures are only the outcome of the experience of others the teaching of drawing will have little educational value. The varying individualities of the children, brought up in different homes and endowed with different temperaments, must also be considered, for the success of the teaching will depend on how far the teacher understands and enters into each child's point of view. Here the Art teacher has a particular advantage, for characteristics will be revealed

in the pupils' drawings which might otherwise remain unknown. To give scope to these varying individualities it is advisable that the children should frequently be allowed freedom of choice, though the teacher must at times dictate the subject, both to secure a series of graduated lessons, and to open the scholars' minds to new ideas.

Varying Development

These variations among children are further emphasized by the fact that a class is often composed of children of different ages and, as far as drawing is concerned, in very different stages of development, for a child though backward in one subject may show great intelligence in others. These differences of age are, however, no very great drawback, because the same scene may be represented in various ways. Little Miss Muffet is a subject eminently suited to younger children. It is obvious in expression and simple in content. Miss Muffet, her basin and spoon, and the terrifying spider will



PLATE IV

SUBJECTS REQUIRING OBSERVATION

Both pictures show evidence of observation. Note especially the man smoking a cigar and the woman wheeling a perambulator. The colour in both pictures is harmonious and convincing.

make a picture without any additions. Older children could, however, put in the surroundings involving more difficult technique and composition. More should be expected from them also in the pose and drawing of the figure.

Co-educational Lessons

Where classes are co-educational differences will occur owing to difference of sex. Boys take a delight in machinery, and seem to have an instinctive knowledge of motors, engines, and ships. Girls generally draw the details of clothes better than boys. But girls as well as boys are interested in the sports and games in which they engage, and it is not safe to generalize. Some excellent drawings of Rugby football scrums have been made by a girl of eleven.

Fairy Story and Legend

The realm of "Make believe" is particularly suited to the child. Not only has it great fascinations but it is easier to illustrate, for the young artists are not hampered by the limitations of reality. They can invent without troubling themselves as to the possibilities or probabilities of their own inventions; they can draw a dragon without being bothered with the requirements of anatomy. They are creators of a world of their own. A child was criticized because she had given her heroine blue hair. "I like it blue" was the uncompromising reply. This is akin to the childlike spirit of the medieval illuminators, and to that which guided the "play-impulse" evident in so much of Gothic sculpture. This play-impulse often expresses itself in some exaggeration which has an element of caricature, and any story which embodies this element appeals to the sense of humour of the young illustrator. Such pignies as the *Lilliputians*, for instance, form a striking contrast to Gulliver, while the apparent height of Jack's giant will depend upon that of Jack. Incidentally the pupil may learn the value of such oppositions. The height of a poplar may be increased or the dignity of an arch intensified by the addition of tiny figures in their neighbourhood.

The adventures of Don Quixote are full of fantasy and humour, though they require more

subtlety of expression. Unlike giant and dwarf, the contrast between the knight and his squire is a contrast between figures of natural though exaggerated proportions. Their different characteristics may be shown not only in their forms but in their faces, giving a fine opportunity for imaginary portraiture.

Other stories will be chosen for the sake of the vivid descriptions of landscape or buildings. Such is the account of Aladdin's Palace. The palace is never described as a whole, but vivid touches are given in succession gradually forming the mental picture. The Hall with its twenty-four windows set in the topmost story, the gold and precious stones, the dome and the curious garden are described one after the other till a fantastic dream-castle stands complete.

Allegories often combine fantastic and realistic elements. Bunyan's *Pilgrim's Progress* will furnish good examples. Christian released from his burden makes a good and expressive picture, but Christian may, and should, be represented as an ordinary man. The fantasy is in the action rather than the clothing. But Giant Despair and his Castle are both purely imaginary.

The Nursery Rhyme

Nursery rhymes are of so many varieties that they are difficult to class. Some may be treated as subjects of everyday life, some as pure fantasy, some as historical scenes, but they have in common the advantage of presenting a simple straightforward picture, mostly with only one or two figures. It is this directness and simplicity that make them suitable for illustration. Unfortunately children become very familiar with pictures of these rhymes, and their illustrations may consequently become stereotyped and lack freshness. The teacher must find ways to start fresh trains of thought. Some change in the conventional costume is helpful. Miss Muffet and Lucy Locket might be represented as modern children, not as wearing mob caps or Kate Greenaway frocks. The Queen of Hearts, instead of being dressed in the long robe and pointed head-dress of the time of Henry V, might have a costume designed from a court-card. A costume of a particular date is hardly ever essential to the meaning of the

rhyme, for Nursery Rhymes do not belong to a special period. Many are of ancient origin, and embody thoughts that belong to all time. "Humpty Dumpty," for instance, is supposed to be a corruption of *L'homme qui domptait*, referring to William the Conqueror, who met his end through a fall. The rhyme embodies the fact that kings are mortal even as other men. This historical origin suggests a different expression from the usual vacant smile for the face on the egg. We expect to see the pride which comes before a fall. A little crown on the

Illustrations to Poems

Abundant source of inspiration for illustration will be found in poems of all kinds, from the simple traditional Nursery Rhymes to the works of the great poets. The value of the Nursery Rhymes consists in their extreme simplicity. They are, indeed, often confined to plain statements of facts, and those facts of the simplest nature. There is very little embroidery of the original statement.

In "Jack Horner" or "Miss Muffet," for



FIG. 20

"Jack and Jill" by a Child aged 7½

top and a more gorgeous apparelling on the legs would help to show the kingly state; even the wall might display the character of a castle.

Some originality might also be put into the surroundings which make up the scene. We all know the child's conventional picture of Jack and Jill. The triangular hill with the little well at the top, and the two children at the bottom. By a few questions the class may be led to see that only enough hill need be included to show that Jack and Jill go "up" the hill. The well is not essential—indeed they might have fetched water from a spring, and the spring might have been in a wood. If also the usual sailor clothes are discarded and Jack and Jill are just such ragged urchins as would be likely to rush helter-skelter down the hill we have an entirely new picture.

instance, there is nothing in the poem beyond the action except perhaps the once descriptive word "Little"—nothing else to distinguish Jack or Miss Muffet from other human beings. The whole point is in what they *did*. There is very little to help the children to create a visual image, so they rely on illustrations that they have seen, unless the teacher gives help with further description or by dramatization. Many short but truly descriptive poems, which need no such introduction, may be found in modern poetry. "We built a ship upon the stairs" ("A Good Play," R. L. Stevenson's *Child's Garden of Verse*) is a good example, and A. A. Milne is rich in material. The eight lines of W. de la Mare's "Chicken" (*Peacock Pie*) bring the scene on the green so vividly to the mind that any introduction on the part of the teacher



FIG 21

A subject within the child's experience. The scene is familiar, and she has been able to make use of her knowledge of figure and model drawing. The composition and decorative arrangement is successful. Note the spacing of the trees and the arrangement of the lettering.

is unnecessary. Inexperienced teachers often talk too much in their anxiety to get results, but a good teacher will welcome any opportunity of setting the children straight to work.

Choice of Poems

All poems which appeal to children are not equally suitable for illustration, and though they give rise to beautiful images it may not be possible to translate them into Graphic Art. This is true of Wordsworth's "Daffodils," which is too elusive to be fixed in a painting. Nature poems are not generally easy for young children, but a careful selection may be used in the top classes of the Junior School. "The Charcoal Burners" (Ernest Rhys, *Modern Poetry*, *The King's Treasures of Literature*) is within their powers, because it combines human activities with Nature. The description of the

sky through the trees and the wind blowing the leaves does not demand greater technique than they may be expected to have acquired. It is not only the descriptive power of the words but also the rhythm of a poem which inspires the illustration. Few children could fail to be influenced by the infectious swing of Walter de la Mare's rhyme of the Three Jolly Farmers (*Peacock Pie*).

The poem is long, and there are many pictures in it, but it would not be sufficient to read only a few lines. The children must hear the whole so that they may be thoroughly imbued with its dancing rhythm.

Subjects taken from Life

If children drew only from imagination, they would soon use up their stock of mental images, but if subjects are set from life the material for

such pictures is at hand, and they are encouraged to observe and to increase their knowledge. Some teachers, realizing this, argue that subjects should always be based on the child's environment, but this would seem not to give sufficient outlet to the imagination or scope for invention. Individual teachers must judge as to the type of subject their own particular children require.

shoes. If, however, the latter subject is taken in class with a model posed for observation, and the lesson is given in a lively manner, the teacher can inspire the necessary enthusiasm, and can get the children to be interested in commonplace subjects connected with the home activities of dressing, cooking, dusting, etc. But the workman digging is a subject which cannot be

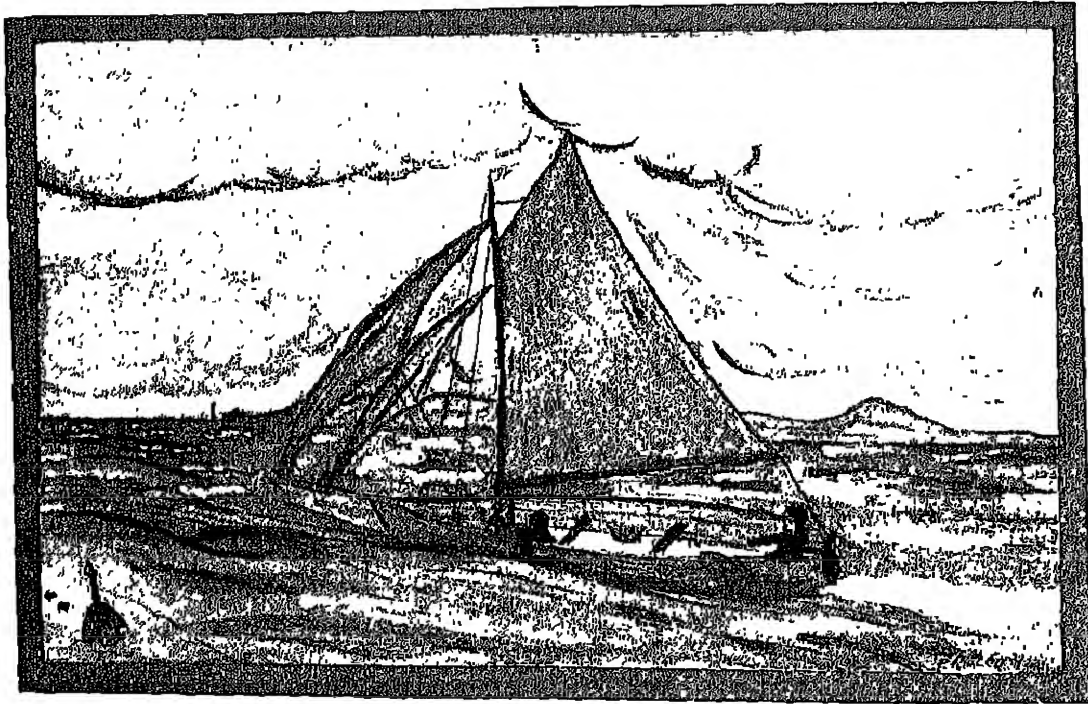


FIG. 22

A Boy's Water-colour Impression of a Sailing Ship

Studies from life should give to the work greater sincerity, and prevent it from degenerating into vagueness and insipidity. If this is to be the case subjects must be chosen which the children will have good opportunities to observe, and in which they will be deeply interested. Incidents of home life which are of daily occurrence do not attract their attention as much as activities outside the house. A boy will stand for hours watching workmen digging, but he is not interested to watch his sister putting on her

transferred to the classroom; it must be drawn from memory. Notice should be given that this drawing is to be made, so that the children may observe with purpose. They should be encouraged to make notes at home of what they have seen, for it is only through trying to record their observations that they will find out what they know and what they do not know. It is obvious that subjects for this type of work should be chosen from activities which are extended over a considerable period. These will

be furnished by the general occupations of the district. The factory, the cinema, the market, the blacksmith's shop, building, fishing, hay-making, will furnish subjects from town, country or seaside according to the type of district. Teachers must familiarize themselves with the environment of their children, and if they, as well as their pupils, keep notebooks, in which to make jottings of all sorts, material for illustrations and for correcting the work of the scholars will not be lacking.

Group Preparation

Some group work can be carried out with advantage in the lessons. For instance, if the subject is "The Fair," the children may divide into groups to observe different things—one group the merry-go-round, another coco-nut-shies, a third tents, and so on. At the lesson the children sketch in their pictures, and before finishing a certain time is devoted to criticism, any particular object being criticized by a child from the group which has made a particular study of it.

Another Use for Poem and Story

Illustrations from life may be introduced by means of a story or poem. This would help to give vividness to the picture, for an incident which is part of a story should have more character than an isolated event, and the author through his descriptive power should help the young artist to conceive his picture. This is especially true of poetry, for a poem often presents a picture vividly, in a very few words, bringing together the various items into one whole. De la Mare's "Chicken," as suggested above, is a very good example.

Correlation with other Subjects

If there is no specialization and the teacher takes all the subjects in the class, and if that teacher has artistic gift, drawing is sure to be made full use of in all subjects, and to form an important part of education as a whole. As a method of taking notes it has some advantages

over writing. It is more natural to young children and more amusing, and it is certainly a better aid to the memory. In this type of drawing copying must be allowed, as much of the material must be taken from books. A child who has been taught to draw from imagination and from models needs no lessons in actual copying. But it is useless to make such copies unless the pictures have been explained. The better the pupils understand what they are drawing the more accurate will be their drawings. This is no place for artistic licence. Children must not be represented with "blue hair" nor a Puritan girl as wearing any colour but dove or grey. When possible the children should be encouraged to visit museums, churches, and other old buildings, and bring back notes of costume or architecture from tapestries or MSS., and from brasses, tombs, or old carvings.

Visiting Museums

Museums will not interest children unless their attention is directed to some special purpose. They are bewildered by the multitude of objects that they find there. But if they are searching for something in connection with their school work, they will find happy employment for their leisure, especially on a wet half-holiday. Special efforts have been made to encourage children to visit the Victoria and Albert Museum in the vacation. The work is undertaken by a band of volunteers, who meet the children at the entrance and tell them what is to be seen. Paper and pencils are supplied and the children are taken to the part they wish to visit. They often have very definite preferences, and ask very intelligent questions. The volunteers are guides rather than teachers, and no attempt is made to give lessons. If no definite visits are organized, teachers may give their pupils some clear directions in school as to what to look for. The museum officials are always ready to help and, though perhaps not a great many of the children will avail themselves of the opportunity, those who do will have the advantage of independent study. In connection with Geography they might work in the Ethnographical section, making notes of the various types of pottery, weapons, and ornaments of primitive races; in

the Natural History section they might find the shells, fish, or birds of countries they are studying; while the Egyptian rooms would furnish background for Old Testament History, and they might draw the costume Joseph must have worn, or the Pharaohs' chariots.

This note-taking in connection with other subjects of the curriculum will provide them with material for making illustrations.

Illustrating the Unfamiliar

Children are always delighted to make pictures full of colour and pattern, and the gorgeous costume and pageantry of past times provide them with just the type of subject that they enjoy. These pictures are most successful if treated decoratively with flat colour and strong outline like some old stained glass window.

Before making their own illustrations they should have seen as many contemporary pictures as possible so that they consciously or unconsciously imbibe the atmosphere of the times, and have enough material from which to select and make their own compositions. But one remembers with distaste the usual heavily coloured pictures of a desert, painted in connection with the Geography lesson. The subject is not easy for small children, they have never seen anything like it, and the beauties of the desert are too subtle for them; but they can with some success make a decorative arrangement of an oasis, filling their picture with a palm and tent and pool below. At all costs they must avoid making a poor copy of some picture they have been shown: their material should be drawn from several sources, and the arrangement should be their own.

COMPOSITION

Children should not derive the same sort of pleasure from making a picture as they do in piecing together the parts of a jigsaw puzzle. They must conceive their pictures as a whole, and not put them together bit by bit, as is likely to happen if they are taught to compose by rule. Yet every good picture will have decorative value, and children may become as interested in the pattern of their picture as in any other form of design. It will be difficult to keep the balance between spontaneous conception and the decorative arrangement of the illustration, just as there is a difficulty in keeping the balance between spontaneous expression and technique.

Concentration of Theme

Some advance may be made, however, without any formal lessons in composition. At first children have no idea of organizing their material into a picture. They put down the various items in a row without introducing any relationship between them. They have no idea of selection, and include in one picture all that they can remember to be part of the story they are illustrating: the teacher will first do away with all

extraneous matter, and get the children to concentrate their attention on one thing only. This concentration can be partly attained through the help of mental visualization. If the children shut their eyes and try to make a mental image before they draw, they cannot see the picture as a succession of objects, but must conceive it as a whole. They are also encouraged to make a conscious selection if they are given a poem to illustrate which contains a variety of pictures. Different children can suggest the pictures they see, and a general discussion will help to decide which suggestions will be most suitable to carry out. In the very early stages, however, before they are able to select for themselves, the teacher may direct them to fill the picture entirely with the figure, house, or tree that is to be the chief subject of the illustration. In the rhyme "Mary! Mary! quite contrary," Mary is the main subject, and will be drawn so as to touch the top, bottom, and sides of the frame. When Mary is complete, flowers, and parts of the path may be added in the spaces left. In this way the children unconsciously get into the habit of making the background subordinate to the main theme of the picture. A good deal of practice may be given



PLATE V

A MEDIEVAL SCENE, BY A CHILD AGED 9
(Correlation with history.)

in this way before the edges of the frame are moved farther from the figure to allow of more background. If the children form the habit of drawing the figure first and then add the background, they will learn to begin with the most

or illustration. Unfortunately, in some schools children are not taught to think of their drawings as pictures, but begin at the left side of the page as they would in writing, and, when they have finished, scribble their names on the right-hand



FIG. 23

"Jack Sprat" by a Child aged 9

These pictures were drawn with a match dipped in ink. The figures are little more than match-stick drawings, but the feeling for composition, the space-filling, and balance are remarkable.



FIG. 24

Man Running Downhill, by a Child aged 9

interesting part, and so will most likely give it its due importance

Design of Picture

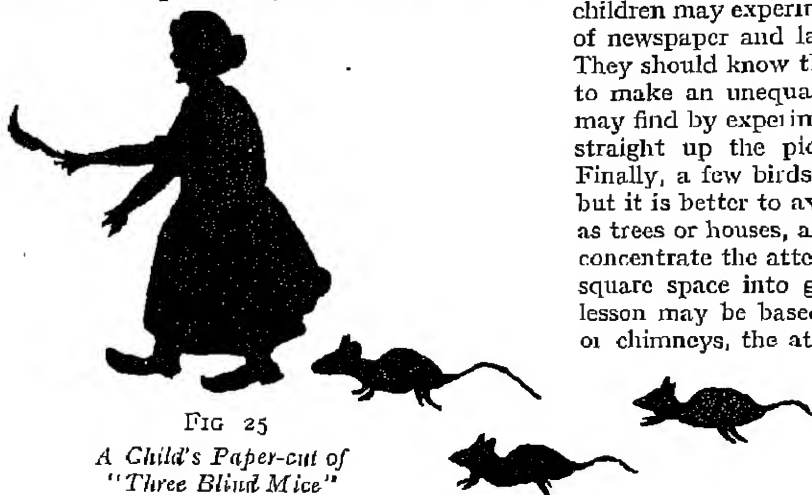
Children will make better compositions as they realize that the design of a picture can add to its expressiveness. The teacher need not talk about "focus," but can explain that an artist tries to draw attention to the part of the picture he considers most important, and that, therefore, it must be carefully placed and not relegated to a corner. The arrangement of the drawing on the page, the ruling of the "frame" or margin, and the careful placing of the child's name should form an essential part of every drawing lesson, whether on plant life, object,

top corner, regardless of any idea of balance. The teacher completes the whole by adding marks in blue pencil on any handy empty space!

Balance of Masses

After getting some idea of how to place one figure in relation to the frame, the next step is to place two figures in relation to each other. This is fairly simple if the figures are united in a common action which causes them to be in close connection with each other, as would be the case in a three-legged race, or if the subject were two girls carrying a basket. A picture of a cricket match would, on the other hand, be very difficult to compose, for most of the figures would be isolated. Jack Sprat and his wife and

Simple Simon are good two-figure compositions. They introduce two masses of different proportions. Jack is thin, his wife fat. Simple Simon is a child, the pie-man full grown. Thus children may be introduced to another element in composition—the balance of masses. In both these subjects there is also a third mass which makes a convenient connection between the larger masses—the Sprat family's dining-table and the



pie-man's tray. It would seem almost impossible to go wrong, yet the children will often make the table so long that Jack and his wife are divided rather than connected.

The paper-cut is the best means of teaching this balance, for the pupils then realize objects as masses instead of as outlines. They can experiment with the pieces of paper in different positions, and even cut patterns in newspaper to try the effect.

Use of Landscape Paper-cuts

Ideas of subordination and gradation can be introduced by means of very easy landscape studies, and these may be carried out in black and white so that the exercise may be as simple as possible. The teacher may begin the first lesson by showing the children how to stick narrow black pieces of paper to make square frames for their landscapes. The very sunplest picture may now be made up of sky, field, and

path. The first question to discuss is the position of the horizon line which will divide the picture into unequal parts. A low horizon and a large expanse of sky will give the effect of flat country. The second step is to cut out a piece of black paper to represent the field. A little discussion and experiment might lead the children to add interest by sloping or curving the horizon line. Before they cut the path out of the field, the children may experiment by cutting it in a piece of newspaper and laying it on the black field. They should know that it is better for the path to make an unequal division of the field, and may find by experiment whether it looks better straight up the picture or sloping across it. Finally, a few birds may be added in the sky, but it is better to avoid important objects such as trees or houses, as the aim of the lesson is to concentrate the attention on the division of the square space into graduated parts. A second lesson may be based on a silhouette of houses or chimneys, the attention this time being directed to the rhythm

of the line forming the silhouette. It will be easier for the children at first if a church tower, a tall chimney, or a tree

is chosen to serve as a dominant unit, so that the line may rise gradually to the culminating point. The position of this point may be decided upon before the picture is begun. A third problem will arise if the square is divided into three parts, the black paper representing the land which divides the white sky from the white water.

In this introduction to paper cutting the divisions have been simple broad masses, which is better for the pupils than to play about with a number of little bits of paper. The work will gradually become more complicated, and having understood the division of a square or oblong into parts, they will be prepared to enter into the question of the balance of the masses in such illustrations as Jack Sprat and Simple Simon.

Emphasizing Principal Unit

The possibility of cutting off part of a mass by the frame of the picture will hardly occur to

the pupils unless it is suggested to them. This is only another way of drawing attention to the principal unit of the composition, for an object that is partly cut off will not attract the attention as much as one that is shown in its entirety. A good example of such cutting off would occur in an illustration to *The Brave Tin Soldier*, showing the little tin soldier just jumping out of the fish which the cook had cut open. It would be obviously impossible to make anything of the hero if the whole of the cook were shown.

Trees

Trees are useful in teaching composition, as they present the contrasting masses of trunks, branches, and foliage. Two or three make a useful exercise in spacing. The pupil can begin by arranging the trunks, the largest one forming the dominant unit, care being taken to contrast the size of the spaces with the size of the trunks. It is seldom successful to cut a trunk in half by letting it meet the frame at the side, as these

masses are not generally wide enough to admit of division, but the foliage may be cut off at the top and the size of its mass decided upon in relation to the grass at the bottom. Thus both vertical and horizontal spacings have been taken into account. The vertical tree trunks and horizontal grass and foliage produce too great a contrast unless some transitional line is introduced to correct the two. This transition may be attained by various means—by the oblique lines of the branches and curves of the foliage masses, by the curving or sloping of the ground line, by sloping or bending one of the trunks of the trees, or by additional masses of trees or hills in the background. The results need not be too greatly influenced by the teacher when the pupil can choose from such a variety of solutions.

Possibilities of Paper-cuts

Paper-cuts should be as simple as possible until the pupil can manage the making of the frame, the difficulties of sticking down the

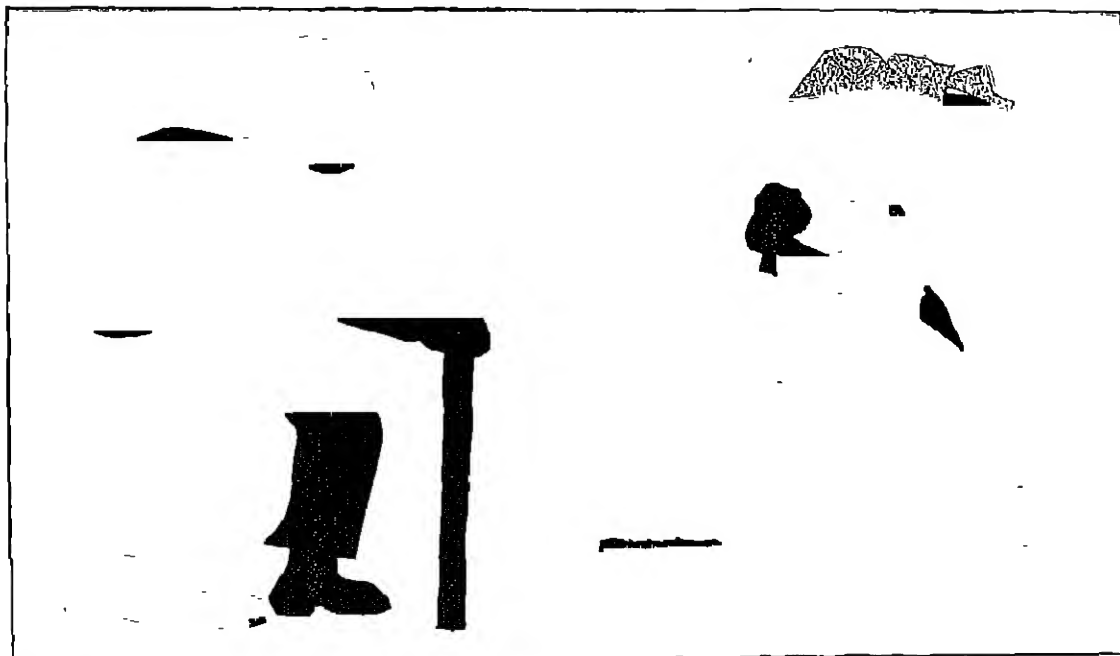


FIG. 26

Paper-cut by a Child aged 9

paper securely, and the cutting of the simple forms. Then the work may become more complicated, and they may enjoy cutting up the masses in different ways to give a variety through pattern. Dresses, curtains, walls, carpets will afford surfaces which may be cut up in various ways and contrasted with those left plain. For instance, a spot pattern on the dress of the Queen of Hearts contrasts with the stripes on the tabard of the Knave, or with the plain spaces of the wall. This can be carried out in black and white by cutting away the white parts of the pattern, but if the paper-cut is to be in colour it is less complicated to superimpose the pattern by sticking one colour on another. Though so much can be learnt from the black and white paper-cut that it will afford a whole course of lessons, coloured paper can be introduced quite early if the pictures are simple and colours few in number. In landscapes the problem is simplified by treating the sky as the foundation of the whole, and by beginning by sticking down a square of blue, yellow, or whatever colour may be required.

The value of the paper-cut will soon be realized by any teacher who tries it. In Central Europe it is one of the common toys of the home, and its influence on the decorative work of the children is marked. As a paper-cut must essentially be thought out and arranged, the teaching

of composition by this means does not tend to destroy the spontaneity of the children's work as might be the case if the free line of pencil or brush were interfered with.

(A paper-cut by a child aged 8 is used as a tail-piece in the PRACTICAL JUNIOR TEACHER, page 175.)

More Freedom for Line Work

The rhythmical connection of line with line, which involves the enjoyment of a line as such, is less easy to grasp. For this purpose the paper-cut is no use. The feeling for rhythm will develop gradually as the pupil learns to draw with more freedom of hand and arm. As it is so essentially connected with movement the pupil should stand in a position giving freedom to the whole arm, and will have greater scope if the work is executed in charcoal or soft pencil on a large piece of paper. Nature furnishes plenty of examples from which to derive inspiration. The springing outline of the cumulus clouds which, beginning with a tiny curve, rises fuller and fuller till it reaches its highest point, or the sweeping curve of the incoming sea as it creeps slowly over the sands may best be represented with a swinging movement of the whole hand and arm as the young artist stands at his work.

DESIGN

Design in the past has been treated too much as a separate subject, apart from other branches of Art and divorced from its natural relation to crafts. Lessons in design were largely confined to the making of borders, or filling certain spaces, and sometimes perhaps a little counterchange. The ultimate aim of these lessons seemed to be to give the pupil a facility in persuading plants to occupy spaces for which their natural growth did not fit them; but all this was irrespective of any particular purpose, and the resulting design was often arrived at in a very haphazard manner with little or no knowledge of principles. Taught on these methods the pupils could not be expected to acquire any real sense of design, for

they had never been introduced to the fundamentals of the subject.

The Ultimate Purpose

There has been lately a great revival of the demand for home-made goods, and there is a feeling growing up that in manufactured articles the processes of designing and of making are too much separated. It is, however, impossible to return to former methods of life; the manufactured article must be accepted, and efforts should be directed to improving its design. Designers can and do gain a knowledge of the processes for which they are designing as part of their training. If the demand for real art in

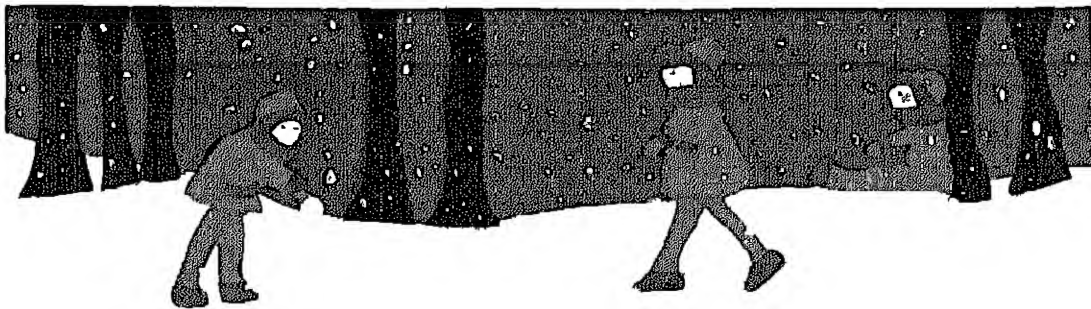
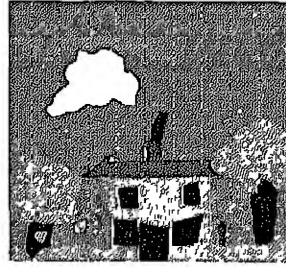


PLATE VI
PAPER-CUTS

manufacture is to increase, the general public must be trained, as children, to appreciate those patterns which show their fundamental fitness to ornament those articles for which they were intended. For example, in making a design for a book-cover account must be taken not only to the shape and size of the cover, but of the thickness of the book, the spacing of its back and corners, and the materials to be used. Not until all these are planned can a pattern be designed in harmony with the whole. Children should not, therefore, be taught to design by means of pencil and paper, but through those crafts the simple beginning of which they can well understand.

Wide Field for Practice

In cases where the Art teachers are not also teachers of the Handicrafts, they must realize that the pencil is not the only tool at their disposal. There is no reason why the children should not be taught to "draw" with the needle in the art lesson, because it is the tool used in the needlework lesson. Patterns can also be made with stamps of various kinds, and in cut paper. The general principles of design come into every art lesson, and will be learnt in the composition of pictures, and through the decorative arrangement of the drawing on the page. In this connection the cutting out and mounting of drawings, with sometimes an addition of a few well-spaced lines, forms a most useful exercise.

Lettering

The craft of lettering is generally taken by the Art teacher, and has perhaps more influence on the pupil's feeling for good spacing than any other exercise. To get a good result much care and thought must be expended on the "lay-out"—the planning of margin, size of writing, space between lines, and so forth. This craft should react on the general school work, improving the arrangement of exercise books, and by being used for school notices, programmes, etc., lead to a greater care for the appearance of things.

Simple Line Patterns

The very elements of spacing can be taught in the brushwork lessons when the pupils are learning to control the brush to form thick and thin strokes. Simple exercises may then be given in the designing of stripes, which may introduce the pupil to ideas of subordination, variety, and contrast. These exercises will find application in woven borders, in the borders of raffia baskets, or as simple decoration in pottery. A few plain lines well placed, well spaced, and of pleasing gradation make a far better decoration than more elaborate patterns for which the pupils are not sufficiently prepared.

Decorative Structure

The structural nature of design can be best taught through needlework and bookbinding, and to some extent through leatherwork. A bag, handkerchief case, or other article can be made in which the ornament consists entirely in the stitches used in construction. If the hems and weight of the stitches are well spaced and colours well chosen, the design is likely to be satisfactory. Suede leather bags need have no ornament but the structural stitchery which forms the seams and unites the handle to the bag. Such ornament leaves untouched the beautiful surface of the leather, and may help the children to respect the texture of the materials they are using.

Repeat Patterns

All-over patterns introduce new problems, and are useful in the Junior School, for they are easier to design than borders or the filling of set shapes. They can be used for book-covers and end-papers, or may form an introduction to textile printing. The essential of such patterns is that the repeat should be quickly produced, for the laborious and mechanical repetition necessary in design should be reduced to a minimum as far as young children are concerned. The simplest tool for the purpose is a stamp cut from a potato. This, pressed on a bit of felt or woollen material saturated with water-colour paint or dye, will give a good impression, and

will make an introduction to work done in linoleum and later to wooden blocks for textile printing. The lessons should be graded, beginning with very simple single stamps, such as a triangle, leading to more complex cutting, and patterns made with two stamps and two colours. The children will learn from this the necessity of repeating one unit regularly over a whole piece of paper before they can judge of their result, and when they have learnt to do this they can try to discover how a number of different patterns may be made from one simple unit such as the triangle. As they cut their stamp into more irregular figures they will soon discover that a second pattern appears in the background, and they should be taught that the pattern of the background is as important as the pattern of the stamp. This may prevent a fault so often seen in weak stencils where the pattern is confined to holes instead of combining both holes and ties.

Rhythm in Design

Another method of producing all-over patterns is through the "pasty-papers" so much in use for book-covers or portfolios. A piece of paper is covered with a thin solution of paste on to which blobs of colour are dropped and brushed in with a large brush. The patterns are made by removing the coloured paste from certain parts either by drawing the fingers across the paper or by combing it with differently cut pieces of cardboard. These methods should prove a good introduction to rhythm which can be obtained by movements, for the pattern is produced by the repeated and rhythmical movement of the hand over the paper. At first the children's movements are uncontrolled and the pattern somewhat vague, but gradually they will develop control and the patterns become more definite.

Borders

Ideas of rhythm may be still further developed in the designing of borders which may be used in making notices and posters, and which may be carried out in colour or black and white. A border may be made by the repetition of

almost any single unit such as a square or circle, by the addition of a few framing lines. Such a border would be monotonous, and the children may learn to add variety by connecting the original repeats by another unit which forms a contrast to the first, but is in harmony with it. The Greek egg and dart motive is an example of this. A parallel may be drawn between such borders and time in music. The dominant unit gives the accent of the first beat in the bar, and designs may be made in 2, 3, or 4 time. This should teach the children that rhythm is as much a part of design as it is of music or dancing. A comparison with music may also bring greater continuity into their work. The common childish fault of leaving too much space between the units has much the same effect as a piece of music played with over emphasized *staccato*. They may next attempt to represent different characters of different rhythms. A design in an abrupt angular style could be made from the figure 4, while a 6 gives a more gliding movement. The first may be compared to soldiers marching, the second is more gentle—the movement of a minuet. Some children who had been well trained in eurhythmics made interesting patterns based on various movements, such as the flight of a flock of birds, the movement of wind over a field of corn, and the falling of the waves of an incoming sea. This work is only preparatory. It helps the children to understand in what the vitality of a design consists. In all design both mass and line must be considered. Lessons on spacing give practice in the combination of masses, lessons on rhythm in the composition of lines.

Geometrical Units

The foregoing pages have dealt with the principles of design as a whole, but it is also necessary to consider the form of the units of which the design is composed. The way this matter is approached is of the utmost importance. As long as the basis is geometrical, as suggested in the borders of circles and squares, or abstract, as in the exercises based on movement, one of the greatest difficulties with which we have to contend is avoided. This difficulty lies in the treatment of natural form, in conventionalizing

it to suit the materials used, and in treating it decoratively not pictorially.

An endless variety of patterns can be made with a pair of compasses which, while affording the children plenty of amusement, will give them training in accuracy. Such a simple problem as the arranging of a circle in a square in harmonious proportions and the further decoration of the border with lines will give opportunities for teaching spacing, transition from one form of line to another, and the relation of the pattern to the form of the square. The somewhat difficult problem of turning the corner of a border is also most easily worked out on a geometric basis. In fact, all the fundamental principles of design can be taught in this way, and a good foundation for future work secured.

Fundamental Principles

But the child's natural impulse is to make use of the forms it sees around it, and as long as the "play-impulse" is allowed free scope, so that these forms are conventionalized in a manner natural to the child, quite delightful work may be produced. Two points should be kept in mind—attention must be concentrated on decoration, not on imitation, and the convention used must be the outcome of the handling of the tool in the way which is proper to it.

It is then important that the pupil, when first learning any craft, should draw the design not with the pencil but with the tool proper to that craft. If a lino-cut is in question let the scholars draw straight on to the lino with a gouge, if the craft is embroidery let them set to work with the needle without previous preparation. Such teaching requires faith, but will meet with its reward later, for no one can design for any craft until he has learnt to think in the terms of that tool, and much harm is done if children get into the habit of thinking in terms of the pencil. A class of girls were set to embroider pockettes in free stitchery. They were shown how they might arrange three masses of graduated size to balance each other, and form a nucleus for their design. They were also shown some good examples of needlework which served to illustrate this balanced arrangement. They were allowed to base their design on any form they liked, and mostly chose a circular flower form. No drawings were allowed, but the relative positions of the three masses were chalked on the material. They were then told to begin with the centre of the principal mass. As the work proceeded they found more and more interest in the stitches and the colour, and several of them produced delightful flower conventions. When they had finished the three masses they filled up the intervening spaces as they wished.

SUGGESTIONS FOR LESSONS

Points to Consider

It is one thing to make notes for a lesson, but another to give it. A good teacher will be ready to follow the pupils' lead and adapt the lesson accordingly, a bad one will adhere rigidly to the prepared notes. In order to secure the independence of the class many lessons must be taken without any introduction from the teacher. The preparation in such cases consists in thinking out what difficulties the children are likely to meet with, so that help is ready as they need it, and such apparatus is at hand as may be required. The following suggestions are for lessons given with the intention of teaching some particular point, and must be so introduced that

the purpose is made clear to the children from the beginning. The teacher's preparation in this case chiefly consists in thinking out how this object may be achieved.

In lessons dealing with technique, such as putting on a wash, the teacher can actually show the children how it is done, but such demonstrations must be confined to technique or the children will merely copy the teacher, and will neither observe nor create. The introduction consists very often in discussions led by the teacher, and the lines these will take must depend upon the pupils' answers or questions. It will be best to think out a few leading questions and to leave the rest to the actual time of the lesson.

Visualization: Figures in Action

A first lesson in visualization to children of 7-8.

Subject. A child throwing a ball.

Materials. Pencil and paper.

Purpose of the Lesson. To help the children to form mental pictures, and through "shut-eye" drawings to enable them to give the spirit of the action.

Introduction. The children are asked to shut their eyes and "see" some familiar object, such as a cat. In order to make sure that they are really forming a mental image they should be asked questions about what they see. What colour is your cat? What is it doing? etc. If they hesitate to answer they are told to "look" again.

The Procedure of the Lesson. Two children are chosen from the class, and one child throws a ball to the other, while the class watches them. The children try to make a mental picture of this game. Then the child who was throwing poses again in the action of throwing. The children again make a mental picture and, with their eyes shut, try to trace this mental image in pencil on the paper. This "shut-eye" drawing is only intended to fix the image on the mind, and should not take more than a minute. After this the child poses for the third time, and the pupils make fresh drawings from memory with their eyes open.

NOTE. The shut-eye drawing will give a continuous line, and will serve to counteract the disjointed character of the "match-stick" and like figures.

Fantastic Imagination: A Dragon

Age 7-8. *Subject.* A Dragon.

Materials. Pencil and paper.

Purpose of the Lesson. To encourage the children to make large free drawings, and to give scope for invention.

Apparatus Required. Pictures of various animals from which the dragon may be constructed, e.g. the bat, lizard, serpent, crocodile, lion. Reproductions of famous pictures of dragons, and photographs of dragons in sculpture. A large piece of ceiling paper, drawing board or strawboard, charcoal, rag, palettes and brushes

(size 9 or 10) for each child. Tubes of yellow, vermilion, emerald, crimson, ultramarine, and black.

Procedure of the Lesson. Step I. The use of charcoal. The pupils stand at their desks and play with the charcoal, making sweeping lines and curves with the whole arm.

Step II. The children sit while the dragon is discussed. What should be the characteristics of the dragon—how can he be made fierce, swift, and powerful? The children then study the pictures of the animals.

Step III. The children stand again to draw the dragons, the teacher being careful to see that they do fill the sheet of paper with bold, sweeping lines.

Step IV. The children choose their colours and paint. When they have finished, the reproductions and photographs are passed round.

NOTE. Children succeed very well when standing, especially if able to move freely. If standing is impossible the lesson might be taken in the Hall, and the children allowed to kneel or sit on the floor. This gives them opportunity for a freer arm movement than they can get when seated in desks.

"The Brave Tin Soldier" (Andersen)

The treatment here shows how a lesson may be treated in two ways according to the age of the children. It is assumed that this story has been taken in English, and that the children are familiar with it.

The lesson is first treated as a paper-cut in colour. Age of children—7½.

Preparation. The teacher must select a suitable picture from the story. This must be (a) simple so that there are not too many things to think about, (b) attractive (there must be something striking about the figures or their action), and (c) not difficult to express. A medium must then be decided upon suited to the style of the story and to the age of the children.

"So they made a boat out of newspaper, and placed the Tin Soldier in it, and sent him sailing down the gutter." This is simple, for the picture can be made from the three items: the soldier, the boat, the water. The combination of the newspaper boat and the tin soldier is unusual,



FIG. 27

Anteus and the Pigmies

Note the small child's enjoyment of detail and incident.



FIG. 28

The Divers

Both the above subjects are suited to children of 8, 9, or 10

and moving water is always attractive. Cut paper will be a good medium suited to the simple flat masses of the soldier and newspaper boat. A fantastic story lends itself to decorative rather than realistic treatment, and small children are more interested in the silhouette than in the solidity of a figure.

Apparatus. Some tin soldiers, or a large cardboard model of one. A large newspaper boat. Coloured paper—red, black, blue, and green. Newspaper, and a piece of grey paper about 6 in. \times 10 in. for the background for each child.

The Lesson. The children are shown the boat and soldier, and told which lines they are to illustrate.

Step I. The Frame. The children are told to rule a frame 4 in. \times 6 in. on the grey paper, leaving a margin of 1 in. at the top and sides.

Step II. The Boat. They decide on the size of the boat—it must be the largest thing in the picture, so as to give plenty of room for the soldier. They cut out one or two of different sizes with which to experiment, and may find that by only showing part of the boat they can make it bigger.

Step III. The Water. The teacher reads "Good gracious! What large waves arose in that gutter, and how fast the stream rolled on!" The children may cut strips of paper of black, blue, or green to represent the water. How can they make the waves rise high?

Step IV. Arrangement of Boat and Water. How will they show that the boat is *in* the water? That it is tossed by the waves? The children place the water and boat and stick them down.

Step V. The Soldier. They first cut the silhouette of the soldier in black, and if satisfied with the shape and size stick the coat and face on the top of this silhouette, sticking the whole, where they wish, on the boat.

Step VI. A narrow frame is added over the pencil line, the children choosing the colour which they think looks best with the colour they chose for their water.

The Same Story for Children of 8 or 9: Suitable Matter for Illustration

Purpose of the Lesson. To teach the children to select pictorial material for themselves.

Preparation. The teacher must think out the

different pictures and their possibilities, and must be able to assist the children's memories.

Step I. The children are asked to think about the story for a minute, and are then told to shut their eyes and make a mental picture. Before they have time to pass from one picture to another, some children are asked to say what incident they have pictured. This may produce a list somewhat as follows—

1. The Little Lady and the Tin Soldier.
2. The pencil jumping about the table.
3. The black goblin jumping out of the snuff box.
4. The Tin Soldier falling out of the window.
5. The Tin Soldier sailing in the gutter with the two boys running beside
6. The boat sinking and coming to pieces.
7. The little Soldier in the fire.

Step II. A discussion then follows as to which of these incidents make good pictures. It is sufficient to discuss one or two, being careful to choose at least one example which is unsuitable. The children must be led to consider which items can be treated most expressively. For instance, compare 2 and 3. In 2 a pencil and table give no such opportunities of expression as the goblin in 3. Is it possible to draw a pencil so that it looks as if jumping? No. 4 sounds promising, but the Tin Soldier is rigid and will only appear to be upside down—there will be no action to suggest falling. In No. 6, however, something can be shown to happen—the boat half under water, the sail breaking.

Step III. The children choose which picture they will paint, and the teacher talks to them individually, helping them to choose a suitable shape for their frame, and to give emphasis to the important parts. For instance, in No. 1 the two figures must be close together, as they form the whole picture. In No. 5 which is the picture—the two boys or the soldier and the boat? Either the boys must be made to fill the picture, the boat and soldier being very small, or they must be left out. In No. 7 help will be needed to express the flames.

Selection of Suitable Material

Subject. The Storm

Materials. Pencil or paints

Age. 10-11.

Purpose of the Lesson. To lead the children to select the best material for a picture in order to make it expressive.

Apparatus. Reproductions of pictures of storms by great artists, such as Rembrandt's etching "The Three Trees," drawings by Hokusai, pictures by Turner and Constable. Pencil, paper, colours, and brushes.

Procedure of the Lesson. Children to describe the appearance of a storm. They will probably mention wind, rain, inky black clouds, etc. They are then asked how they can picture the movement of the storm and discover that it will be better to draw things which can be blown about such as clothes, smoke, trees, grass, rather than rigid objects, such as a house. They may find that the smoke from a bonfire is better than the smoke from a chimney, because in the latter case too much of the picture might be taken up by the rigid house.

The children then choose individually what they will include in their pictures, and what they will draw as the principal object. They then draw or paint as they prefer. As they finish they are allowed to look at the reproductions provided. These may be put up in the classroom for further study.

NOTE. "Speed," "Confusion," "The busy family," "Fear," "Mystery," "Conspiracy," are good subjects for this type of work, and may be set for free work in future lessons or as subjects for the sketch club.

Dramatization and Composition

Subject. Old King Cole

Materials. Pencil and paints.

Age. 10-11

Purpose of the Lesson. Through dramatization to lead the children to arrange and criticize grouping, and so to help them compose their pictures. Also to help them to realize what poses are most expressive.

Teacher's Preparation. The possibilities of the room must be considered—e.g. what furniture may be useful, how much space will be needed. Properties must be brought—bowl, pipe, fiddles, and possibly sceptre and crown, and bright pieces of coloured materials.

Procedure of the Lesson. The parts are allotted to six children by the teacher, during the lesson these children will be changed for others at the suggestion of the class. One child is asked to place the actors, and probably arranges them in some sort of row. The positions are discussed. The arrangement is criticized as monotonous and unnatural. This may lead to grouping—some figures behind, some figures in front: some kneeling, others sitting or standing. The king may sit with figures standing behind and kneeling in front, or may be raised by means of a platform or table. The coloured materials may be draped over the chair, be hung as a backcloth, or used as a carpet. Having arranged the grouping, the pupils criticize the poses and expressions. The children then return to their seats and make their drawings.

NOTE. This lesson is suited to an hour's work—20 minutes for dramatization, and 40 minutes to plan and sketch the pictures, which may be completed at home or in a second lesson.

Expression through Colour

Subject. The spirit of spring.

Materials. Paper and paint.

Age. 11-12.

Purpose of the Lesson. To teach the children how to use a scheme of colour, and to lead them to understand how such a scheme may add to the expressiveness of their pictures.

Apparatus. Paints, paper, etc. A large spectrum chart, a bunch of spring flowers, and shoots of young green leaves.

Procedure of the Lesson. *Step I.* A comparison is made between the flowers and the chart. The children will see that the flowers mostly belong to the yellow area of the spectrum, which also appears the fresher and more transparent area. A few blue flowers, such as the grape hyacinth, form a contrast to the yellow, and help to make the yellow more shining and brilliant.

Step II. The children make a colour scheme for their pictures by painting a band of colours giving the proportions of each as they intend to use them. These schemes will be similar but not necessarily alike.

Step III. The children are asked to think what kind of figure will suit the spirit of spring, and

what poses would best suggest the light fresh feeling we associate with it.

Step IV. The children draw their figures. While they are drawing the teacher goes round and helps them, at the same time discussing with them the distribution of their colours.

Cut-paper Illustration

Subject. Rabbits and hutch.

Material. Black paper

Age. 11-12.

Purpose of the Lesson. To get the children to realize the value of alternation—black on white and white on black.

Apparatus. Black gummed paper, white or toned paper for background, some newspaper and scissors. Sketches of rabbits which the children have made in another lesson.

Procedure of the Lesson. *Step I.* Children cut out the black rabbits without previous drawing, but may, if they wish, cut patterns in the newspaper.

Step II. They are told the main objects to be

included in the picture—rabbits, hutch, a bit of path and grass, some bushes. They try to visualize the picture, and cut out and stick down the frame the size they require.

Step III. The teacher leads the children to discover that the black rabbit must have a white background. They discuss which objects are best white and which black. For example, the white hutch, behind the black rabbit, may be patterned with black hairs, the roof can be shown up against black bushes. Bits of white path showing through the black grass may form part of the background to the rabbit, etc.

NOTE. As this is a paper-cut it is better to start with the principal object as black. If the same composition were worked out in linoleum it would be better to have it white. The paper-cut is essentially black on white, while a lino-cut should be thought of as white on black.

When sticking down the paper the children should cover their work with a piece of newspaper and rub hard on this. This will serve both to keep their pictures clean and to make the paper adhere firmly.

“RED RIDING HOOD”: A CRITICAL STUDY

The following critical study of children's work is designed to show how this may aid the teacher to direct the course of future lessons

1. *Method*

The illustrations in Plate VII have been chosen from a set as representing interesting points of development. They are from the earliest illustrations of children aged about 8, and were painted in direct brushwork, without the aid of pencil. The children were supplied with four colours which they distributed as they pleased without the aid of mixing.

2. *Composition*

The children have a very fair command of the brush both for fine and broad work, and they have already formed the habit of well filling the space which they have created for themselves by drawing a frame. In this way, having a natural love of pattern (note the spots on the bag, and the leaves in *B*) they have, with the aid of the wood as a background, made a

pleasing arrangement. These children have been taught to draw the subject of the picture (in this case the figure) first and then to add the background.

3. *Trees*

The trees are symbolic and decorative. In the case of *D*, however, there is a real attempt to represent the ground space by varying the positions of the bases of the trunks. The only other attempt to get a correct position for the trunks is in *C*. This drawing is, however, still in what may be called the silhouette stage, the ground being represented by a strip across the bottom of the page and the trees brought down to this level. The confusion which occurs in *A*, where a tree-trunk appears faintly between the legs, is avoided in *C* by not completing the back tree.

The branches shown in *B* and *C* are primitive. In *B*, the most decorative of the four pictures, they are arranged down each side of the trunks, and one leaf is placed carefully at the end of



PLATE VII
FOUR ILLUSTRATIONS OF "LITTLE RED RIDING HOOD"

each branch. In *C*, which is more realistic, they grow out from the top.

4. *Figures*

With the exception of *B*, all the drawings show the continuity of the figure under the dress, but *A* and *C* are the more advanced, giving a suggestion of movement and showing a greater freedom of attack. *A* is the most advanced, the limbs being fairly well shaped (note especially the curve of the arm) and the feet foreshortened.

5. *Faces*

The faces are still elementary in character, but they show a fair idea of the positions of the features, and some effort has been made to distinguish between their shapes

Lessons based on the above Criticisms

The five points criticized above will afford suggestions for future lessons, and the more advanced drawings may serve in each case as a starting point. Children learn a great deal from comparing their pictures and discussing which has the best effect.

1. *Method*

The free brushwork for illustration cannot be improved upon at this stage, but greater accuracy will be obtained by giving a few pencil

lessons on the drawing of figures and trees. The four colours given have been successfully handled, and some mixing may now be attempted. Experiment has been made in this direction in drawing *C*, where blue has been mixed with the brown to show the difference of ground and stockings from the trees.

2. *Composition*

Through picture *D* the class may be introduced to the idea of placing objects at different levels on the ground, and so representing distance.

3. *Trees*

If it is winter a lesson may be given on the branching of trees. The children can observe them on the way to school, and the class can discuss the methods used in *B* and *C*.

4. *Figures*

The teacher must try to get as much movement into the drawings of all the class as is shown in *A* and *C*. Memory drawing of figures in poses showing action will produce this result. One or two lessons on match-stick figures would also be useful to get the continuity of the figure under the clothes which is lacking in *B*.

5. *Faces*

Attempts should now be made to develop the character and expression of the faces, and attention paid to the shapes of the features.

SUGGESTED SYLLABUS

FIRST YEAR'S WORK

ILLUSTRATION AND EXPRESSION	DEVELOPMENT OF POWERS OF OBSERVATION AND TECHNIQUE
<p>Simple rhymes or incident giving opportunity for expressing emotion through action, e.g. "Tom, Tom, the Piper's Son," "Little Miss Muffet," Playing ball.</p>	<p><i>Composition</i> The placing of the picture on the page with good margins. The subordination of details to the principal interest by filling the whole picture with the object to be drawn. Single figures to be used.</p> <p><i>Figure Drawing</i> in pencil and in brush. Childish symbols to be developed into figures related to reality through (a) Memory drawings of action, (b) Observation of clothes.</p> <p><i>Observation</i> (a) Practice in forming the mental image through shut-eye drawings, (b) Memory drawing of dolls and other toys, also of articles of clothing, such as hats, shoes, coats, pinafores.</p> <p><i>Brushwork.</i> (a) Fine and thick lines (that is drawing with the brush) e.g. frames to pictures, outlines of figures, etc., the brush being used instead of the pencil. Roman capitals to be used for titles.</p> <p>(b) Washes, e.g. skies, fields, walls, etc.</p> <p><i>Colour.</i> Bright colours used without mixing.</p>

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SECOND YEAR'S WORK

ILLUSTRATION AND EXPRESSION	DEVELOPMENT OF POWERS OF OBSERVATION AND TECHNIQUE
<p><i>A</i> Development of interest in the story. Stories can be used involving more than one figure, e.g. "Snow-white and the Dwarfs" "The Little Tin Soldier," "Ten Little Nigger Boys"</p> <p><i>B</i> Decorative and bright-coloured illustrations giving scope for pattern and invention, e.g. "Mary, Mary, Quite Contrary," "The Queen of Hearts," "The Christmas Tree," "The Dragon."</p>	<p><i>Composition</i> Addition of background to the figure.</p> <p><i>Figure Drawing.</i> Action and proportion taught with the help of paper-cut or match-stick figures. The face with special reference to position of features and growth of the hair.</p> <p><i>Observation.</i> Development of the symbolic tree into a real tree with branches. Memory drawing of elliptical objects useful in illustration, e.g. pail, tub, plate, pond. Effects of distance through size.</p> <p><i>Brushwork.</i> Running colours together—e.g. sunsets, rainbows. Transitory effects such as a lighted candle or smoking match.</p>

THIRD YEAR'S WORK

ILLUSTRATION AND EXPRESSION	DEVELOPMENT OF POWERS OF OBSERVATION AND TECHNIQUE
<p>Subjects involving violent action or dramatic emotion, e.g. "Spilt milk" (dejection), "Wind and Storm," "Speed," Scenes from history and geography. Subjects involving many figures</p>	<p><i>Composition</i> Cut-paper exercises (black and white) involving simple division of picture into good spaces, e.g. field, sky, and path, sky, houses, and river.</p> <p>Development of good silhouettes on the sky line, as line of roofs and chimneys.</p> <p><i>Figure Drawing.</i> Memory drawings of figures bending, stooping, or sitting. Studies of expression in faces with some attempt to develop the true shape of the various features.</p> <p><i>Observation.</i> First ideas of vanishing lines as observed in paths, avenues, railways, etc.</p> <p><i>Brushwork.</i> Further practice in running in colours. The painting of one colour in different depths.</p>

FOURTH YEAR'S WORK

ILLUSTRATION AND EXPRESSION	DEVELOPMENT OF POWERS OF OBSERVATION AND TECHNIQUE
<p>(a) Expression through colour—e.g. Spring, Summer, Autumn, Winter, or Cinderella in the kitchen (sad scheme), Cinderella at the Ball (gay scheme).</p> <p>(b) Stories requiring more thought and invention—e.g. "Gulliver's Travels"; "The Five Servants" (Grimm).</p> <p>(c) Subjects taken from history, geography, and Scripture, e.g. The Tournament, A Norman Hall, Saul's Army Encampment.</p>	<p><i>Composition.</i> Paper-cuts in black or colour, giving practice in the balance of masses, and in connecting one mass with another. Subjects involving two figures, such as Jack Sprat and his wife. Arrangement of trees, etc.</p> <p><i>Figure Drawing.</i> (a) Studies from the seated figure with the object of getting more correct drawing of legs, arms, etc. (b) Memory drawing of dramatic poses, sometimes in fancy dress, e.g. Red Indian stalking.</p> <p><i>Observation.</i> First ideas of the eye level—an open door, corner of a room. These should be introduced into the illustrations.</p> <p><i>Brushwork.</i> As before.</p>

FIFTH YEAR'S WORK

ILLUSTRATION AND EXPRESSION	DEVELOPMENT OF POWERS OF OBSERVATION AND TECHNIQUE
<p>(a) Subjects drawn from the occupations of daily life—e.g. Hay-making, road-mending, the camp fire.</p> <p>(b) Abstract subjects making a greater demand on the imagination such as "Stealth," "Mystery."</p> <p>(c) Imaginary portraiture connected with literature and history—e.g. Shylock, Gollath.</p>	<p><i>Composition.</i> Coloured paper-cuts giving opportunity for gay pattern. Black and white paper-cuts giving alternation of black on white and white on black.</p> <p><i>Figure Drawing.</i> Development of rhythm in figure drawing. Poses taken from dancing and eurythmics, and suggested by a few continuous lines. Portraiture—Studies of heads, (a) typical of various characters, (b) actual portraits taken from children with marked characteristics.</p> <p><i>Observation.</i> Practice in converging lines and in rectangles in the horizontal plane, e.g. floor mats, table tops, etc.</p> <p><i>Brushwork.</i> Revision.</p>

OBJECT DRAWING

THIS article contains suggestions on the teaching of object drawing. Let us be quite clear that object drawing is only one aspect of pictorial art, and should be carried on progressively throughout a child's school life side by side with other aspects, such as imaginative work, design, lettering, modelling, and appreciation.

The handling of different media, the value of tone and colour, line and mass, composition and perspective, can be taught effectively and unobtrusively while drawing common objects. The training in technique and careful observation will be a great help in creative work, and will provide the necessary tools and manual dexterity to help children to overcome difficulties in picture making.

Every teacher should draw up his own scheme of work, introducing variations from time to time, but a few suggestions arising from my many experiments may be found of interest.

Setting the Right Standard

Young teachers must not expect to attain startling success immediately: "Slow, but sure" is a good motto. When teaching drawing in the lowest classes in Junior Schools they usually over-estimate the knowledge possessed by the pupils, and are apt to talk over their heads. At the same time they under-estimate the degree of manual skill possessed by these same children, and are content with a low standard of work from them. Insistence on a high standard of execution will always bring its reward in the long run.

The Importance of Still Life

"We may rest assured that the love of Nature and of truth will outlive every fashion in Art" (N. E. Green). The history of art is one of long, steady development, punctuated by hundreds of fashions which had their day and then faded away into the limbo of forgotten things.

Of late years there has been a tendency to decry object drawing, and indeed it used gen-

erally to be a dreary business. As is so often the case in educational matters, however, the pendulum has swung too far. Young children are expected to express their own ideas and emotions without knowing the fundamental principles of the technique of drawing.

For proof of the importance of still life we have only to turn to the work of many of the great masters. Their portraits include interesting and intimate details which illuminate the person's private or business life. Holbein's "George Gisze" and Chardin's delightful pictures of domestic life are good illustrations of this. Fantin-Latour's and many present-day flower studies are pictures in themselves, while Chardin's picture of a loaf, knife, and bottle in the National Gallery is sufficient evidence in itself that very common objects can be beautiful and artistically satisfying.

What to Expect from Children

What can we reasonably expect from the children when they come from the Infants' Department, and when they leave for the Senior School?

It must be assumed that nearly all of them will like drawing. If they do not then somebody has stifled their enthusiasm, and there ought to be a load on the conscience of that person.

Young children love to draw bright objects and scenes of life and movement, but the time soon comes when they find that their manual dexterity does not keep pace with their mental progress. They get new ideas, but are unable to express them on paper. In consequence, if they are not taught some of the fundamental principles at this point their interest in drawing wanes, and sometimes disappears altogether.

Self-expression and Guidance

We have already spoken of the present tendency to encourage self-expression and the expression of the emotions. This is an admirable aim, and should certainly be kept in mind at all times. The artistic few will derive full

benefit from this course, but the average children and those below average must have something tangible to go on, or they will waste their time.

It must be remembered that we do not expect children to write original stories in good English without adequate preparation. It is necessary to provide them with a few ideas and a technique, and to teach them to express these and their own ideas by expounding the value of sentences, paragraphs, etc. It is just as necessary to give them ideas and fundamental principles in drawing.

Originality

The necessity for originality is sometimes overstressed. Sir Joshua Reynolds is reported to have stated that during his lifetime he painted only six original pictures. Of course, we must not fly to extremes and under-rate originality. It should be encouraged at all times, but lame dogs must be helped over stiles. Do not expect children to perform miracles, so give them plenty of practice to enable them to master the various media which they will be called upon to handle. There is a certain amount of donkey work in all the arts before any degree of perfection can be attained.

The Material and the Spiritual in Art

Godfrey Blount has admirably expressed this two-fold aspect in *Arbor-Vitae*—

Art has a double mission. It has a material and a spiritual duty to fulfil. Its material duty is to make and decorate useful things; its spiritual business is to remind us that man does not live by bread alone—to bless our toil by perpetual promises, and to make its exercise a pleasure instead of a pain.

Method of Approach

Instead of studying the teaching of object drawing teachers might say, "Let the children draw whatever they like. We will look on, advise, and assist."

Professor Cizek of Vienna has shown that this can be done very successfully, but generally speaking it can be carried out only with a small, specially selected class under the guidance of a

teacher who is full of inspiration and originality—in short a teacher who is a genius.

With large classes it is still necessary to give definite instruction along orderly lines of progression.

Apropos of Professor Cizek's methods, however, the following passage may be interesting. It was taken, including italics, from *Kelly's Rudiments of Drawing, for the instruction of Youth*. The book is undated, but must have been published early in the last century. "Perhaps it may be asserted with truth that drawing is *learned* rather than *taught*."

There seems to be very little new under the sun.

Planning the Work

An examination of a number of drawing books will sometimes reveal the fact that the teaching has been haphazard, and that no systematic scheme has been followed. The reason for the choice of the object is not always obvious, and suggests that the first to hand has been taken. Moreover, it is often uninteresting to the children.

Hints for the Teacher

For the drawing lesson get everything ready before the appointed time. The task of instruction is too difficult, and the time too short, to be interfered with by the provision of materials when work should be in progress.

Know the principle which you wish to teach, and have more than a hazy notion of the methods by which you hope to reach the goal.

Do not be discouraged by failure. There is always a waste-paper basket.

Above all things, do not blame the children for the failure. The fault is probably on your side. By constant practice, and searching for the best methods, you will find that results will come slowly but surely.

A little preparation before the lesson will save a lot of trouble during the lesson. Try to arrange for the drawing lesson to come at the beginning of a session or to follow a lesson which will allow a little time for preparation.

As in all other subjects success depends almost



PLATE I
A WINE-BOTTLE STUDY IN PASTEL

entirely on the skill of the teacher. The teacher is the dominating factor all the time, so be prepared for praise or blame according to your deserts.

Individual and Class Specimens

It is advisable to maintain a judicious blending of drawing from individual specimens, i.e. one per scholar or desk, and drawing from one large object for class instruction.

Individual specimens place more work on the teacher, and are a greater drain on the sources of supply.

If one object is used try to get a large one, so that general truths can be expounded effectively for the benefit of all. It is even better to get two or even three similar objects, so that all sections can get the same view of the object. This will avoid confusion where foreshortening occurs

Technique

To obtain complete mastery of the manual dexterity required to draw well would take up more time than can be spared in an already crowded curriculum. Allow plenty of latitude in matters of technique. Show various methods on brown paper and the blackboard, but do not be too dogmatic about any one method.

Using Various Media

At various stages in the Junior School it is necessary to use pastel, water-colour, and pencil. It is well to bear in mind that each medium has its own special qualities of beauty and also its limitations, and should never be carried beyond its legitimate functions. Practice should be given in order to obtain manipulative skill in the medium. Without this, expression must be cabined, cribbed, and confined.

Selecting Object and Medium

The bulk of the work in Junior Schools should be done in pastel, although water-colour washes may be attempted at all stages if convenient. The lead pencil is difficult and unresponsive in

tiny fingers, and is of little value before the 9-10 age group.

An object may be unsuccessful in one medium, but quite all right in another. The objects should be chosen for their suitability for the medium. They should also give practice in the shape with which you are dealing at that particular stage of the course.

The children should not be set too many problems at once. If they are puzzled by difficulties of shape and dimension let them use a medium with which they are familiar. When trying a new medium choose an *object* with which they have previously had practice.

Methods of Working

Do not mix media, e.g. there should be no pencil with pastel work. The outline should be lightly drawn in the colour of the object with pastel, or with charcoal, which can be flicked off without damage to the drawing.

Another method is to work from the centre outward in mass, keeping the general shape all the time.

Some people say that results count, and not the method of doing the work. Others reverse this theory, and say that the method is more important than the result. Each teacher must decide this matter for himself or herself, after mature consideration. It is generally accepted, however, that the "Value of education lies in the doing."

A little girl aged 6 years was drawing another little girl who was sitting in an armchair. She drew the girl first, and then put the chair round the figure. This is working from the centre outward with a vengeance.

Adjustment of the Drawing to the Paper

Insist on the correct placing of the drawing in the space provided. This trains the sense of balance and rhythm. The sides of some drawings burst out of the paper, others look lost in a desert of paper. A simple cardboard viewfinder, about 4 in. by 3 in. (see Fig 1) will help to get over this difficulty.

Arranging the Model

The object should be given a background similar to that on which the children are drawing, and (especially if it is glazed) should stand on something which will not give strong reflections in it. The children will then see their effects on paper as they see the object against the background, and get correct values right away.

A wooden stand on which to place the object, with a suitable background, can be made in any manual training centre (see Fig. 2)

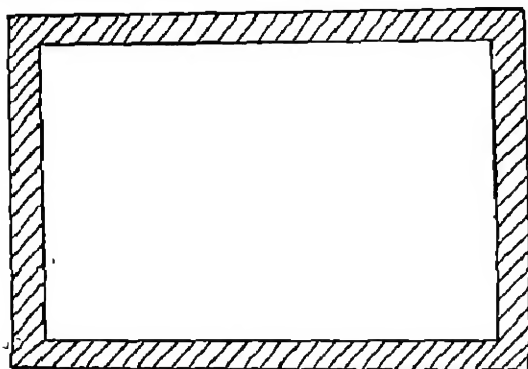


FIG. 1
Cardboard View-finder

The background to a drawing is very important, and deserves more attention than it usually receives.

The object is placed on the horizontal surface and shows up against the vertical background. The colours and relative sizes of these two surfaces can make or mar a drawing

The Young Artist's Signature

Children are usually anxious for their names to be seen on a drawing, and sometimes the name as written in pastel is the most striking item on the paper. This little weakness of theirs is best dealt with by allowing them to write their names, and a title for the drawing, in spaces provided for the purpose. The whole may then be finished off with a line or two in lieu of a frame (Fig. 3).

Shadows

Another matter which requires attention is the general weakness of shadows and shadow shapes on the two background surfaces.

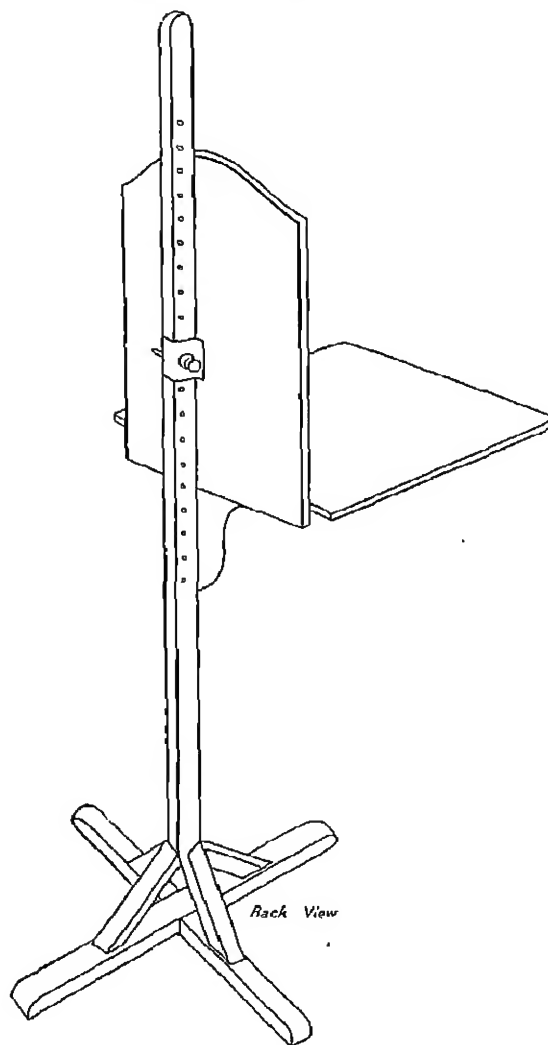


FIG. 2
Wooden Stand for Placing Object

All shadows are not jet black. Objects, even when in shadow, still possess colour, although in a lower key than those in a bright light.

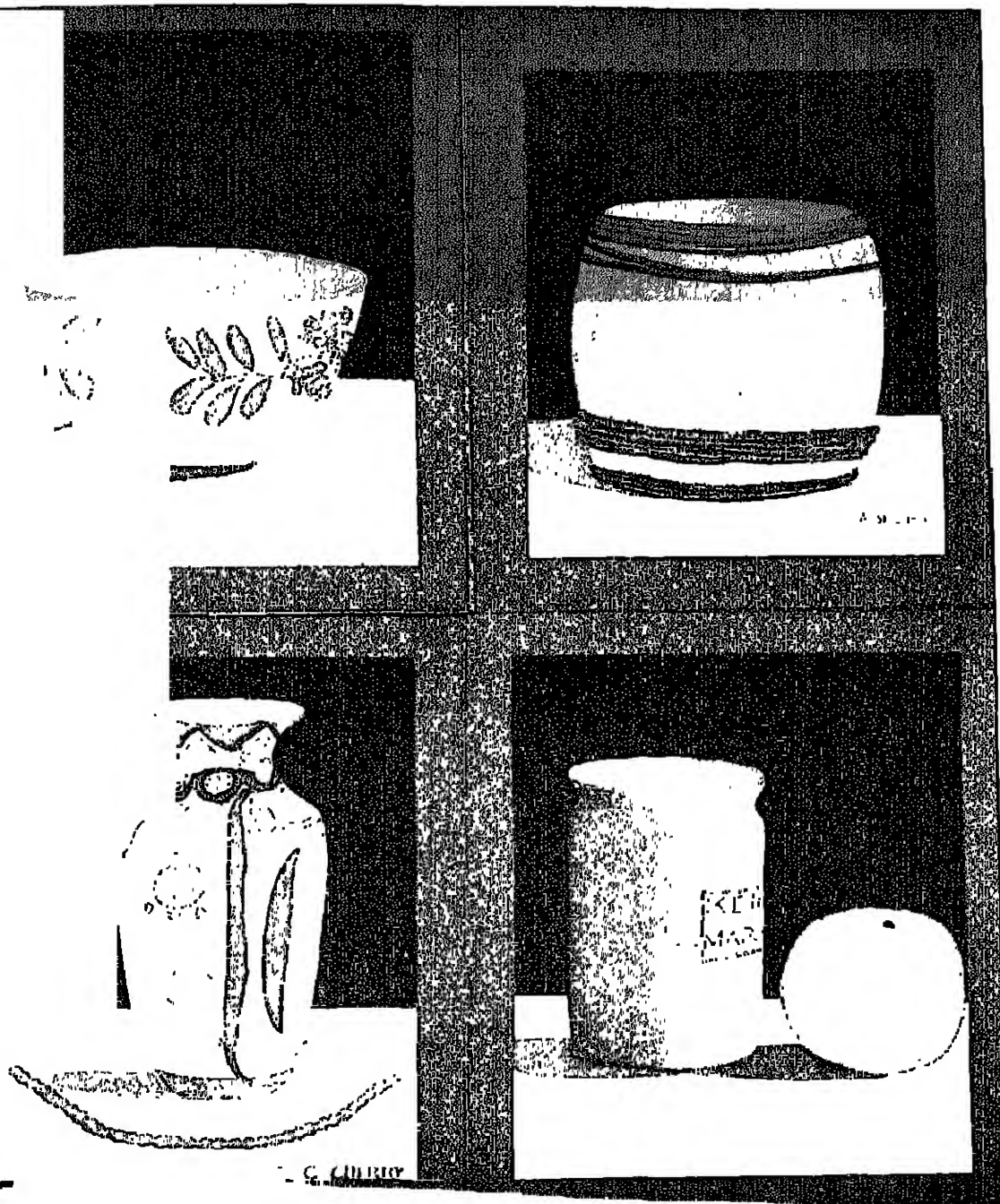


PLATE II
WATER-COLOUR DRAWINGS BY PUPILS 10-11 YEARS OF AGE

Broadly speaking, it may be treated thus. To obtain the effect of shade on a coloured pastel surface add, very lightly, the complementary colours, e.g. if the colour is red add blue and yellow, which form green. This will give the effect of grey, without killing the freshness of the colour. In water-colour run the complementary shadow wash lightly over the coloured surface, when the under surface is perfectly dry.

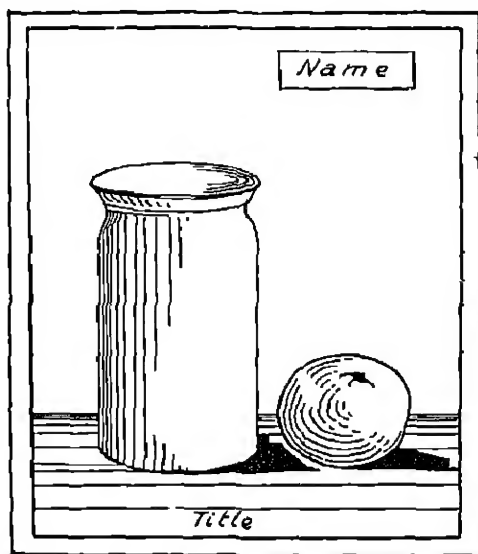


FIG 3
Spaces for Name and Title

Practical Value of Quick Sketching

Quick sketching of objects in line from observation and memory should be practised occasionally. This develops a sense of proportion. Correct and expressive drawing is the fundamental of all pictorial art. Plenty of practice develops facility in the use of the medium. Quick sketching, besides providing a useful means of expression, develops manual dexterity and economy of line. To all except the chosen few, who will attain artistic finish, this is the most important part of the drawing lesson.

Most people will agree that sketch maps are more useful than meticulously finished maps for purposes of illustration. A sketch map or a well-drawn piece of scientific apparatus is often

more intelligible than the written matter which accompanies it.

Some teachers under-estimate the value of the ability to draw.

Occasionally let the children draw an object quickly, several times, in different positions on the same sheet of paper during one lesson (see Fig. 11).

Using the Time Profitably

There is considerable doubt about the benefit of the average drawing lesson as taken generally at present. With younger children especially, after the outline has been drawn, most of the filling in is a sheer waste of time. How often are we confronted by small children who say glibly that they have finished their drawings in ten minutes, when we have fondly hoped that they will be quietly occupied for half an hour at least. Who is to blame? Either insufficient work has been set, or the preliminary explanation and discussion have not been thorough enough. Therefore let the children draw the same object, without elaborate finish, in different positions.

With large classes the drawing room is no land of lotus-eaters. It calls for skill, energy, patience, and unceasing supervision.

One or two of the most promising pupils might be permitted to practise large drawings on the blackboard, and thus develop freedom in hand and arm movements.

Memory Drawing

Memory drawing develops the power to visualize things which have been seen before, enables the children to call up a mental picture at a moment's notice, and encourages detailed observation.

It is a very good exercise to train the sense of proportion, and to equip children with the power to give a fair representation of the general outline of the object. The details are generally faulty. Several boys, aged 7 to 8 years, were tested as follows. They were given five minutes' observation and then ten minutes' drawing from memory. This was followed by ten minutes' drawing with the same object left in front. Only

the outline and prominent features were asked for, because smearing in with crayon often destroys the value of the drawing. The results showed that most of the memory drawings were quite as good as those drawn with the object in front of the class.

This does not prove that children have wonderful memories. Their work in general subjects casts a doubt on that theory. It shows that their power of observation is not well developed. Therefore, this should be directed. They do not look intelligently at the object unless directed to do so. Know what you wish to teach in each lesson. Draw attention to that aspect and nothing else, or you may confuse the issue. For instance, if the children are drawing an apple point out the general shape and colour, the highest light and deepest shadow, and the position of the stem.

Preparation for Memory Drawing

Prepare for memory drawing as you do for essay writing. The subject should be announced beforehand, studied, and discussed before the drawing is attempted. The whole lesson should be planned out with a definite aim in view. Then a general criticism and discussion of representative efforts should conclude the exercise.

Suitable Subjects

Cultivate the drawing from memory of objects in the school, the home, and in the streets or fields; in fact, anything which comes within a child's everyday knowledge, and which lies within his powers of delineation. Keep this aspect of drawing continually before the children; it is a most valuable accomplishment.

Method and Utility

The Board of Education suggests a first drawing with the eyes shut after preliminary "air" practice, a second drawing from memory with the eyes open, and a third drawing from the object to be finished as carefully as possible during one lesson.

As a result of the concentration which is essential during the preliminary observation,

and the subsequent efforts of the children to reproduce on paper the mental pictures which they have formed, their minds will become filled with information which will be useful when they attempt more difficult work in the Senior Schools.

Finally, memory drawing should occasionally be used, in the form of a test, to see if the pupils have remembered the fundamentals which they have learned during previous lessons.

Drawing Scheme Suggestions

Object drawing can be treated either as an end in itself, or as a means to an end. In the latter case the end should be to help in creative work.

Drawing often shows very good results at the top of the Infants' and Senior Departments. Now there is something to aim for at the top of the Junior School, which should bear fruit later on.

Children's free expression requires guidance from the teacher. To the majority of children a time comes when their minds conjure up pictures which are beyond their technical ability to portray. The pupils are now confronted with difficulties of shape and media, and, in consequence, results on paper suffer until these difficulties are overcome. The basic shapes, light and shade, and colour values impose a severe test on them at this stage. Therefore, the various problems should be presented in a manner which is likely to be as simple and interesting as possible.

Attractive Objects for the Younger Ones

For younger children the object chosen should be big with outstanding features and attractive colour, e.g. a small Bovril bottle was not successful with one group of children, but a very large one, used for shop window dressing, attracted the attention of the same children, and they asked to be allowed to draw it. The results were very much better in this case.

In some Infants' Departments remarkably fine handwork in raffia and wool is done. Surely it should be within the scope of children to make

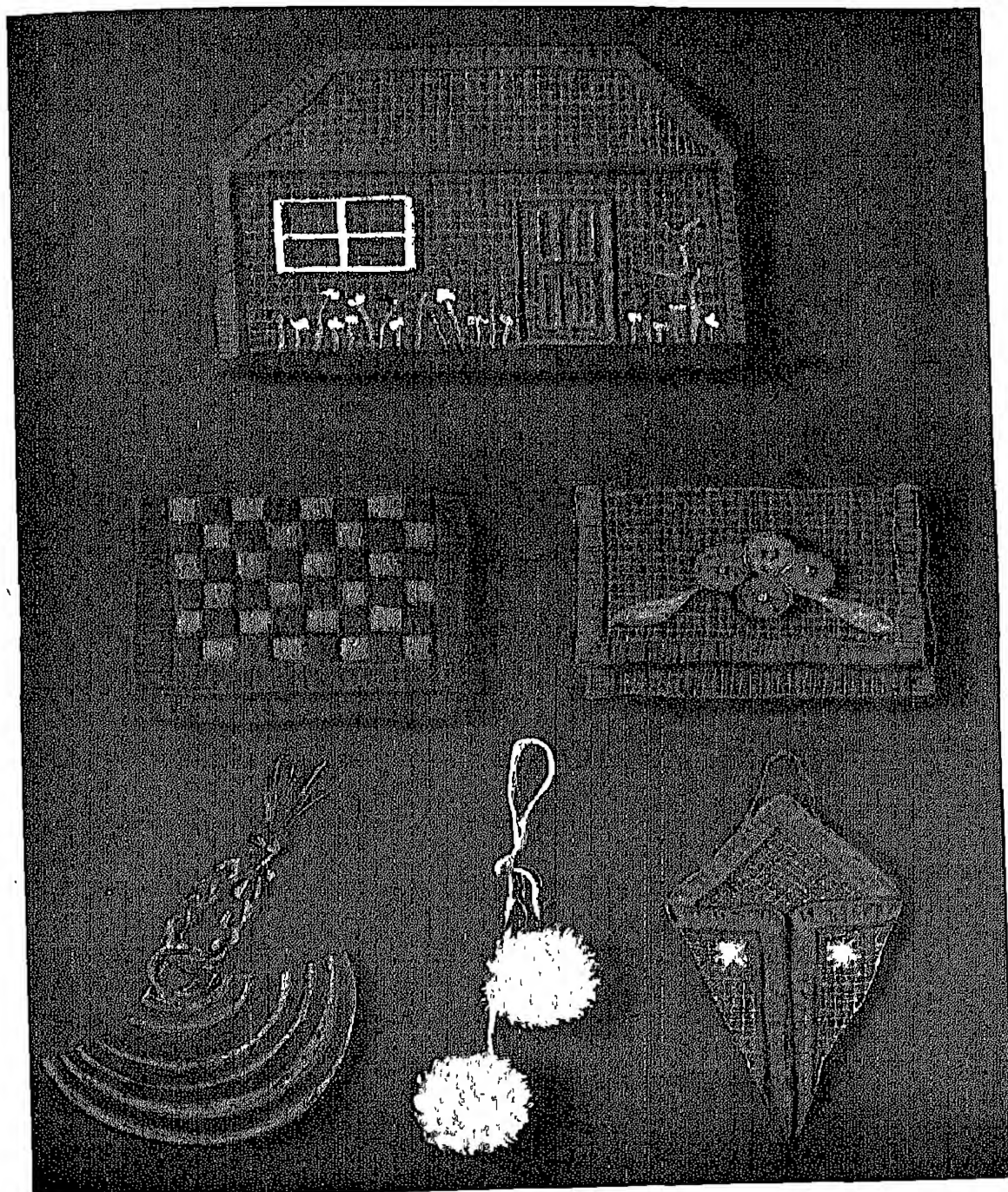


PLATE III

PASTEL DRAWINGS FROM HANDWORK SPECIMENS MADE BY PUPILS 7-8 YEARS OF AGE

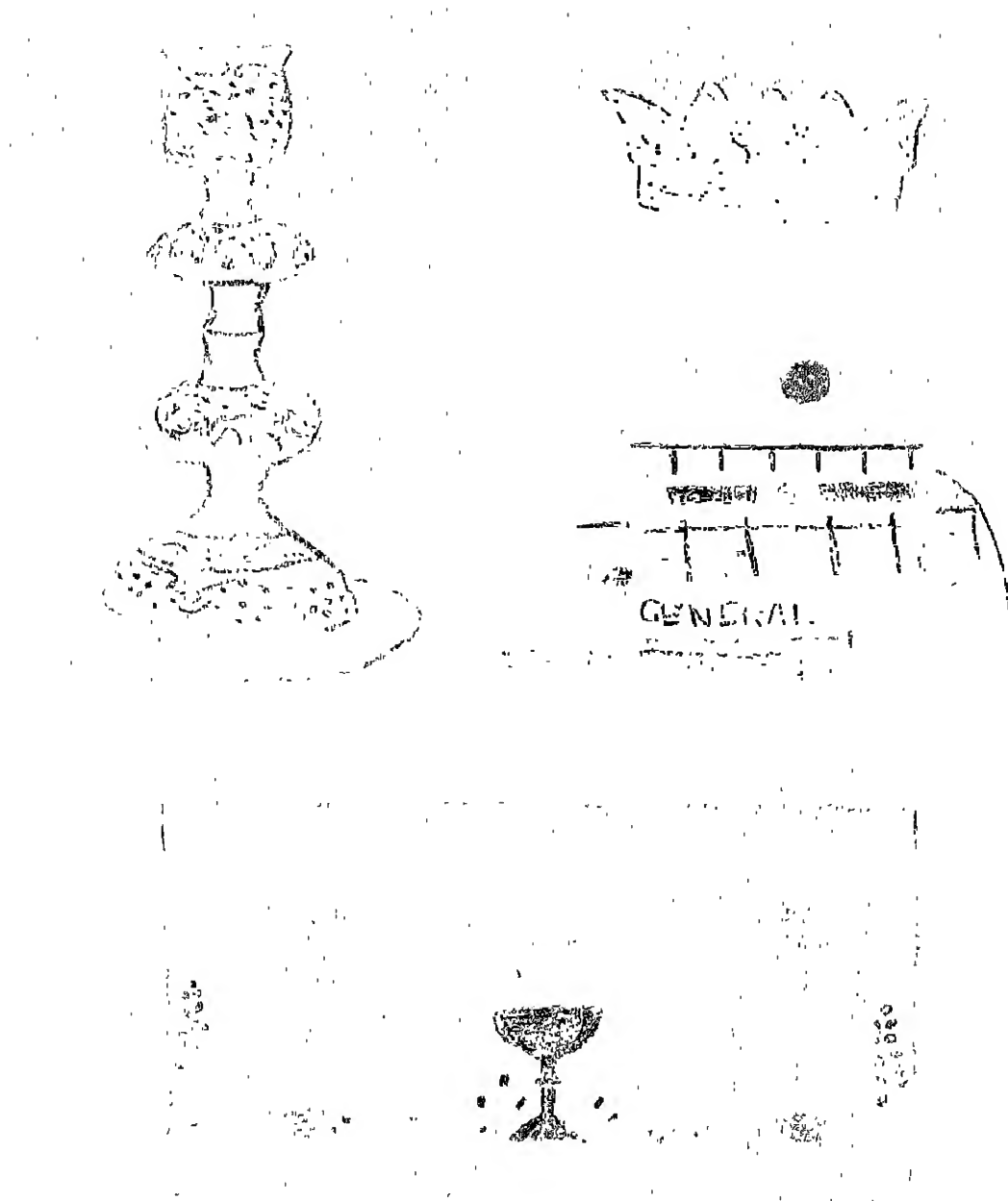


FIG. 4

Memory Drawings

1 and 2 Candelstick and Crown—7 years
3. Bus—9 years. 4. Garden—9 years

a pictorial representation of articles which they have previously made.

This type of object is eminently suitable for pastel work, involving as it does merely a series of lines to represent stitches, and touches for shadow. Moreover, it provides excellent practice in handling the pastel medium, and gets over this preliminary practice in an interesting way.

Fundamental Aim—Correct Reproduction

Whether a drawing is done in line or in mass, with pencil, crayon, or brush, the fundamental thing involved is the power of draughtsmanship, i.e. the ability to produce the correct shape of the object so that it can be readily recognized.

There are, roughly, forty full teaching weeks in the year. If an endeavour is made to teach some definite point in every week of that year the teacher will be amply repaid by the progress effected. Young children who appear to be absolutely hopeless half-way through the year often make tremendous progress in the last month or two.

The following passage is taken from the Board of Education *Suggestions on the Teaching of Drawing*: "The teacher can only be successful when a clear and definite purpose runs through the lessons."

But the teacher must be enthusiastic, and must have the saving grace of humour. It is much better to laugh quietly to oneself at the artistic efforts of backward pupils than to worry needlessly.

Gradation of Objects

This should be based in the first place on the difficulty of drawing the outline.

The importance of tone and colour values must not be overlooked, of course, but in object drawing a fair representation of the object should be expected. The following basic shapes are arranged in order of difficulty.

1. *The Flat*. Objects in low relief, e.g. hot-water bottle, envelopes with seals, etc.

2. *The Round*. (a) Spherical objects in one

colour for tone values, high lights and shadows, e.g. cricket ball.

(b) With additions, e.g. apple with stem and leaf.

(c) With rings involving ellipses, e.g. coloured ball.

3 *The Cylinder*, introducing in due course—

(a) The ellipse at the top and bottom, i.e. foreshortening;

(b) Additions such as *opened tin, jar with brush*, etc

4. *Rectangular objects* involving parallel lines converging, with objects always below the eye level.

5. *Examples of Cylindrical and Rectangular Objects*, with details which tend to obscure the basic shapes, e.g. bundles of things, parcels tied up.

This scheme involves the provision of a large number of objects so that a suitable choice may be made in order to carry out the particular principle which is under consideration.

Type of Objects

The objects chosen should be bright and attractive, and likely to appeal to the children and fire their imagination. Watch them rub their hands with glee when the object is unusually attractive. The difficulty does not dismay them. In fact, they do not realize that there are so many difficulties to overcome.

The main objective is to obtain interest and to give pleasure. Variety is the spice of interest, and constant repetition is wearisome. Therefore a good selection of specimens is essential. A change of medium and of type of lesson will also help to sustain interest.

Infants' Departments are cheerful places nowadays. Raid this Department, and you will find plenty of bright colourful objects to draw. Give the children something their tiny fingers can tackle. Avoid objects involving large masses of colour in the early age groups, and in all groups avoid masses of black crayon—it is usually very soft, and makes a fearful mess.

If objects are to be brought by the children from their homes it is a good policy to see them some time before they are required for use. Toys may be relied on, but alleged *objets d'art*,

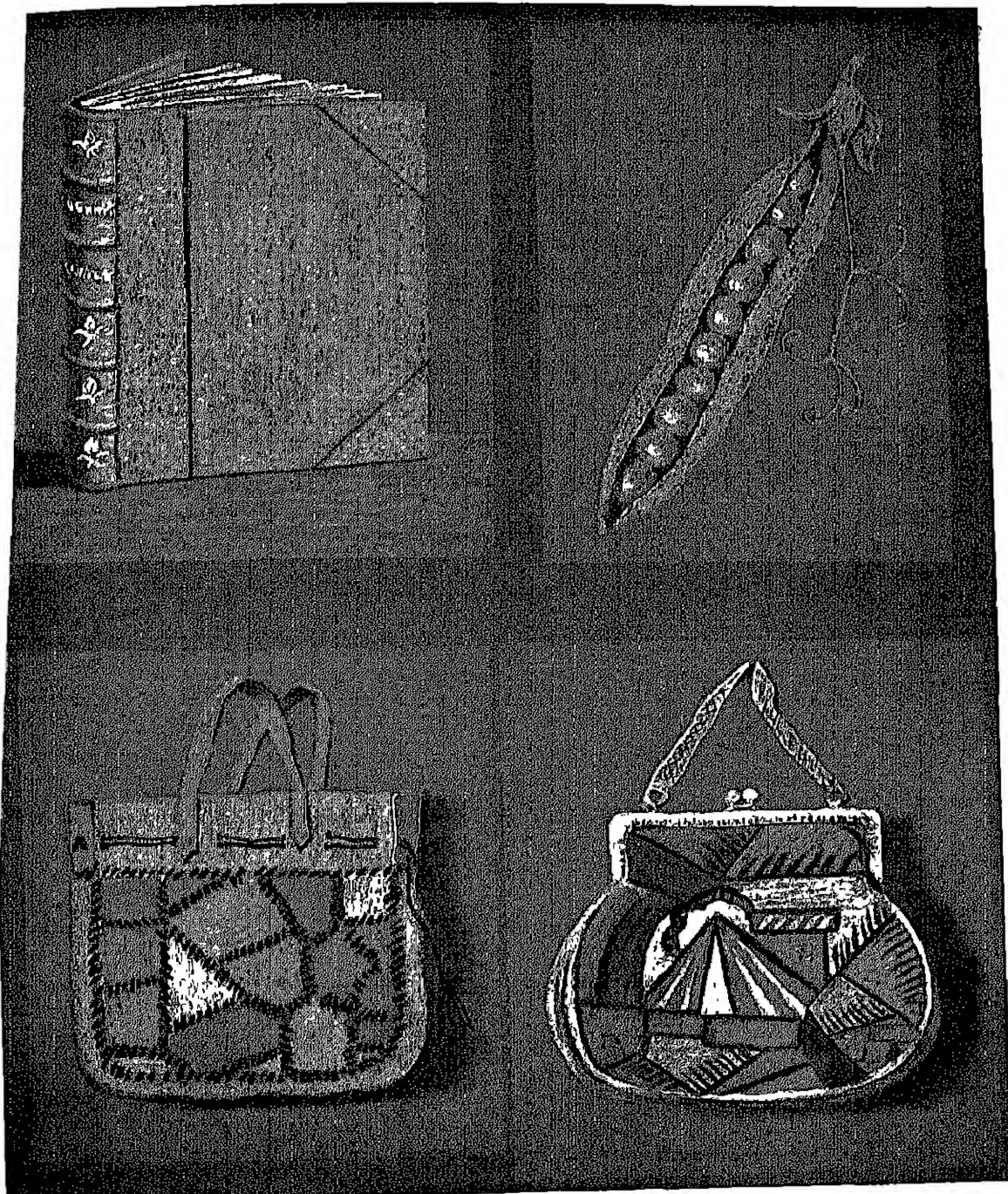


PLATE IV
OBJECT PASTEL DRAWINGS SUITABLE FOR JUNIOR SCHOOLS

such as vases, are often weird and wonderful in their shapes and decoration. Their value as drawing objects is often nil

Results depend very largely on the type of objects selected for drawing. Continual failure to produce something which will merit the commendation of the teacher can often be traced directly to objects which are unsuitable for the purpose.

Suggestions for Models

The following list of suggested objects may be useful. They are not arranged absolutely in order of difficulty, and, of course, the list contains many more examples than can be attempted in any scheme

1. Objects in Line and in Low Relief.

Paint brushes, cricket stumps, bails, whips, arrows, pens, walking sticks, golf clubs, envelopes, fans, hot-water bottles, combs, clothes brushes, windows, flags, doors, feathers, shields, labels.

2. The Round.

Cricket ball, bowls, pomegranate, coco-nut, coloured marbles, football, bladder, apricot, lemon, turnip, tomato, beads, peas, Christmas pudding, melon, balls of wool, string bag and balls, striped balls.

3. The Cylinder (with ellipses).

Serviette ring, windmill, Chinese lantern, ninepins, bon-bons, jugs, handbell, siphon, tins, barrel, ink bottles, drum, bottles with labels, gum bottle and brush, cup and saucer, chianti bottle, ginger jar, shaving brush, bundle of wood, bundle of rhubarb, candlestick, tea-pot, coffee-pot, dumbbell, mallet, bucket.

4. The Rectangle.

Tea-caddy, matchbox, chocolate box, pencil box, books (choose good, well-bound books with fine shape and colour).

5 Miscellaneous.

Cricket cap, Indian club, cricket bat, batting gloves, pads, pocket knife, golf club, tennis racquet, cakes, scissors, biscuits, collar and tie, old boot, golf bag, shuttlecock, leg guards, tongs, tools, box of paints, packet of crayons, schoolbag, kettle, opera glasses in case hanging on nail, frying pan, science bottles with coloured material inside and labels outside, bellows, skipping-rope,

bugle, shells, fan, tambourine, towel, toy horse, duster, carpet, scarf, tie, cap, soft hat, coloured ribbons, bathing shoes and caps, cushion, tea-pot cosy, golliwog, cloth dolls, teddy bears, feathers.

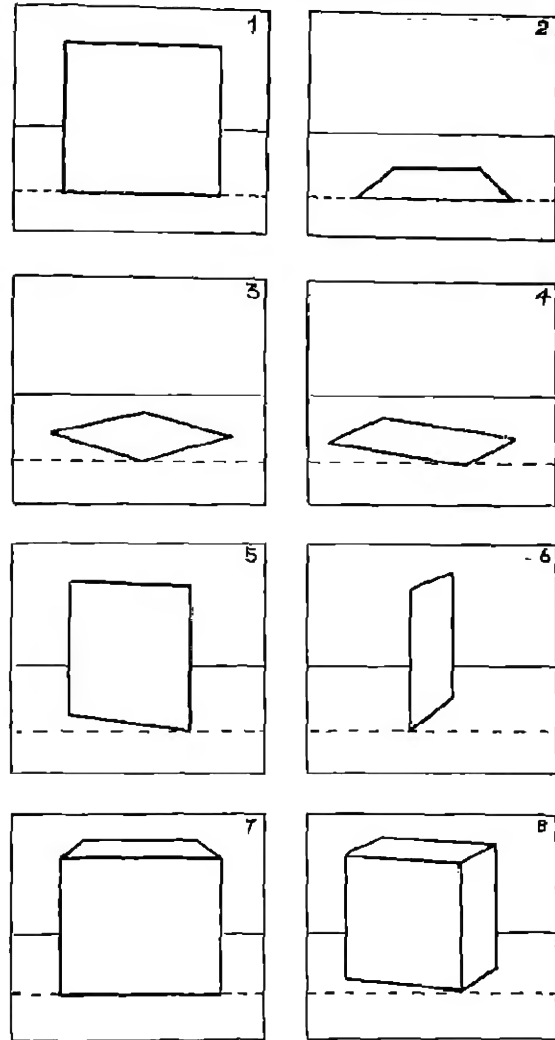


FIG. 5

Foreshortening the Rectangle

Foreshortening

The pupil should sit squarely facing the object and hold a pencil, ruler, or piece of string at



FIG. 6
Examples of Junior Work

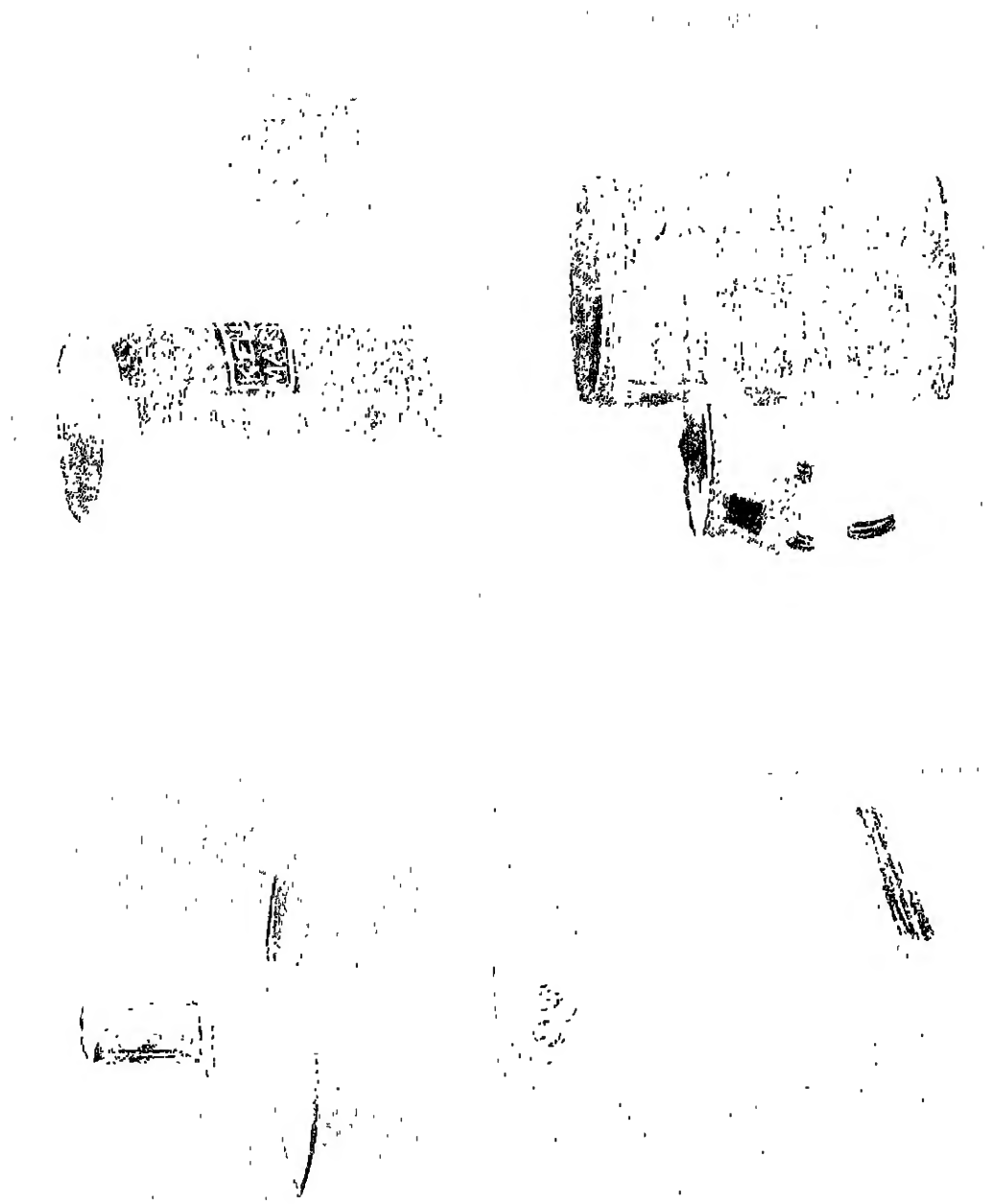


FIG. 7
Pastel Drawings by Children aged 10-11 Years

eye level can be demonstrated with the following apparatus. Cut four circles of equal diameter in thin cardboard. On to each stick a piece of thick cardboard. On a strip of thick cardboard 9 in. \times $\frac{1}{4}$ in. mark out $\frac{1}{4}$ in. spaces. Pin the four circles to the strip at intervals, as shown in Fig. 10. Care must be taken to make the circles project at right-angles to the cardboard strip.

Holding the strip so that the top circle is on the eye level, the exact widths of the three lower circles measured in $\frac{1}{4}$ in. units will be seen, and the rule established; that the farther below the eye level a circle is placed the more nearly circular it appears. Similarly, by placing the bottom circle on the eye level, a rule for circles above the eye level can be demonstrated.

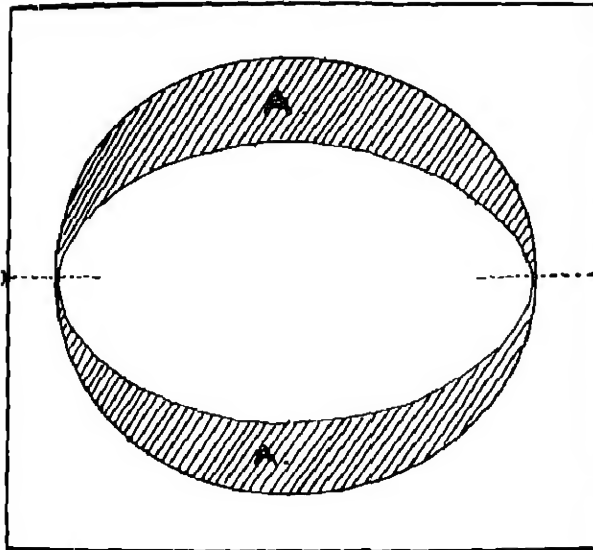


FIG. 9

Simple Apparatus to Demonstrate Foreshortening of the Circle

By comparing the appearances at arm's length and half arm's length, the fact that the ellipse becomes narrower as the circle recedes will be discerned.

All these facts should be verified by observation on objects about the room or playground—such as the electric light shades. The facts thus learned will be useful in memory drawing.

All the above apparatus can be made by the older Juniors.

Nature Specimens

For the display of individual specimens stick the spray or flowers in a ball of plasticine to

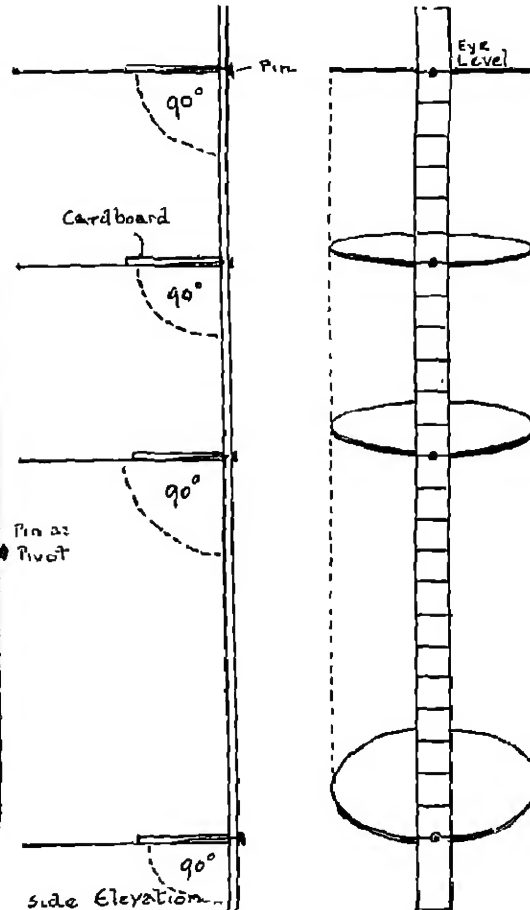


FIG. 10

Simple Apparatus to Demonstrate the Appearance of the Circle in Relation to Eye Level

keep the object upright, and the leaves or petals in their natural position.

The more delicate shapes in Nature specimens should be chosen for the younger children, e.g. growing grasses, buttercups, and tall daisies.

Will they like the subject? The reply is, "Have you ever watched young children picking wild flowers and grasses?" They will be working in line with pastels, so endeavour to provide specimens accordingly.

Nature specimens must of necessity depend upon the seasons of the year. Some of the following may be attempted: holly, mistletoe, chestnut buds, daffodil, lily of the valley, bluebell, daisy, apple blossom, hips and haws, acorns, and autumn leaves.

Individual drawings of flowers and fruit might occasionally be cut out in silhouette, grouped, and stuck on to a suitable background with a coloured bowl, or made into a frieze to decorate the room (Plate V). The colour woodcuts of Hall Thorpe will give ideas in this direction. Coloured papers, cut to shape and touched here and there with pencil or pastel, will also group up very well. It may be said that this is not "object drawing." The reply is that there are no water-tight compartments in education. It may appear that this is not object drawing, but if, in addition to the joy which they will experience while engaged in this type of work, the children cut out the flowers and fruit from direct observation of the objects, they will be learning quite a lot about colour, grouping, and placing which will serve them well later on.

Nature drawings may be kept as a record of Nature Study lesson specimens at various stages of growth, with dates attached, for example—

- (a) Growth of the chestnut from bud to flower;
- (b) Bulb growth in jar;
- (c) Carrot top on flannel or saucer;
- (d) Acorn in jar.

Sources of Supply

In town schools it is difficult to obtain suitable Nature specimens in sufficient quantity, although the ladies generally score in this respect. Perhaps this is because men seem to have a rooted objection to carrying posies through the streets.

Some time ago a letter appeared in a daily newspaper, over the signature of a clergyman living in the country, suggesting that country people should send specimens of flowers, leaves, conkers, etc., to the children in crowded town

districts, and offering to forward specimens. This clergyman sent very fine Nature specimens to a London Boys' School on several occasions. The immediate result was that the drawing lessons received a remarkable fillip, and the drawings showed considerable improvement in every way. This clinches the argument that the provision of attractive and suitable subjects is a vital factor in drawing lessons.

A glance through florists' catalogues will give many ideas for the presentation of flowers and vegetables, and sports' catalogues provide numerous examples of items of interest connected with sport.

Children's annuals, newspapers, magazines, and posters on the hoardings are full of illustrations for the presentation and artistic treatment of common articles in daily use. It is helpful to collect the best of these illustrations and use them occasionally to help the children to grasp the technical methods which have produced the artistic result.

Every school should have a collection of objects which contains samples of all the shapes in the drawing course. Many schools now possess a school shop consisting of dummy packages as used for the window display in shops. These dummy jars, bottles, and packages are extremely useful because their shapes and colours are so artistically displayed.

Building Up a Picture

Some objects lend themselves to adaptation as simple landscape and seascape drawings. Sailing boats, china cottages, farm groups, geography models, etc., come within this sphere of activity.

Have a toy boat with sails drawn from the object. Then let two blue washes or pastel masses for sea and sky be added. Leave out, or put in, a white cloud or two, and add one or two sea-birds (see Plate VI).

The others can be attempted in a similar manner. Models, either individual or communal, which are made in connection with the history and geography lessons, could be pressed into service. History models might include a Norman castle, chariots, bows and arrows, pikes, shields, helmets, stocks, a pillory, ships, sedan chair,

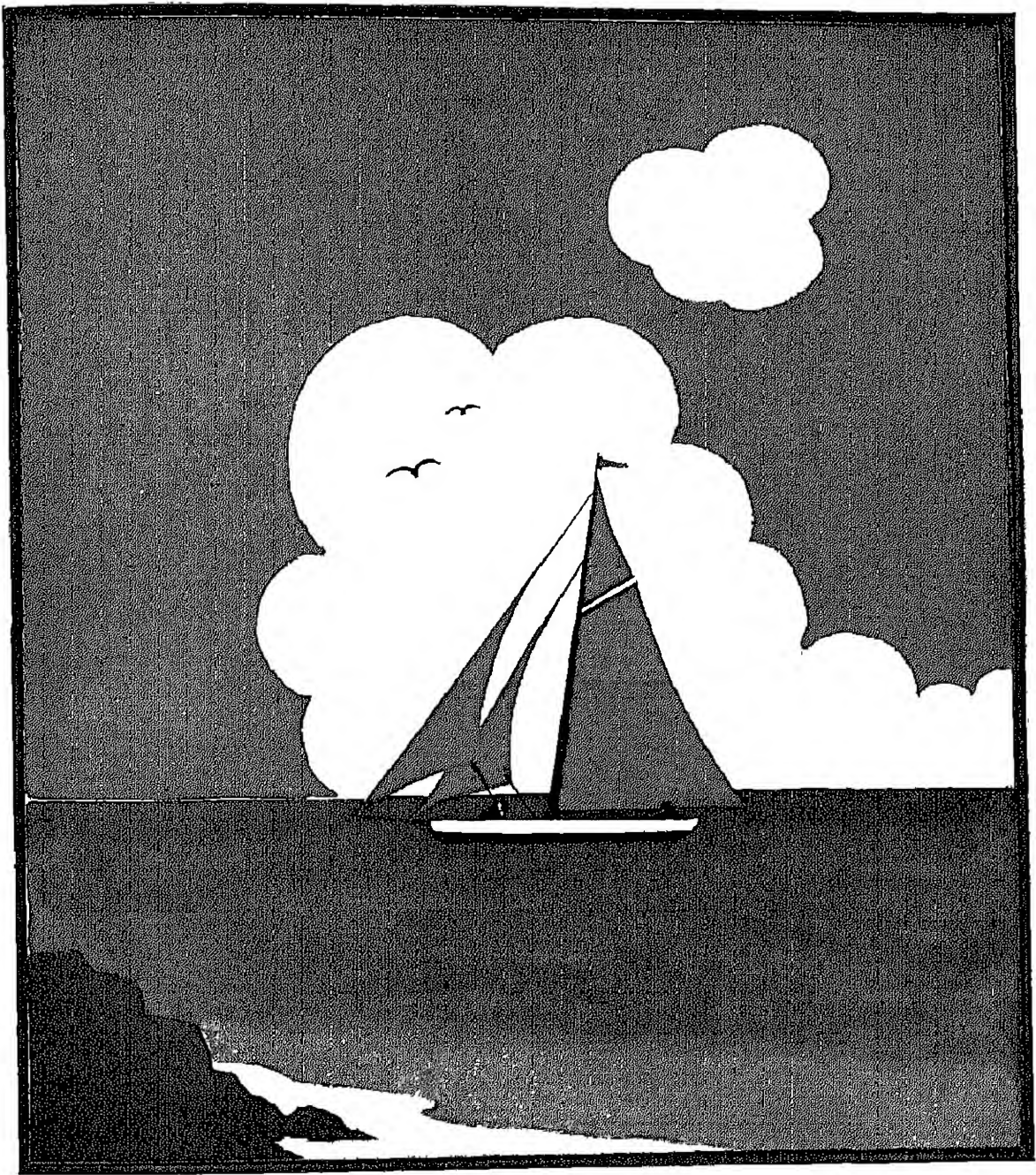


PLATE VI

SEASCAPE BUILT UP FROM PAINTING OF A MODEL BOAT
Sailing boat was painted from a model Sea, sky, and details were then added

link extinguishers, etc. Geography models often provide windmills, Arab tents, Eskimo scenes, lighthouses, bridges, etc.

Conclusion

Set a high standard, and try to satisfy your own conscience.

You may not be satisfied with the visible results of your labours, and you will never know the full benefits which you have conferred on the children under your care.

"We can only get out of life what we put into it." This is very true of teaching in general, and of teaching drawing in particular.

It is no good to provide the media and hope for the best. You must know what you are striving to get.

A good teacher is a law unto himself.

It is advisable for inexperienced teachers to follow a course. They may learn the art and craft of teaching as they go along.

Do not consider yourself bound to adhere absolutely rigidly to any course. Oddments arrive at any moment, and the opportunity may

be too good to miss. The interest, and the tonic value on the teacher and scholars, will outweigh the disadvantages of a broken course.

Keep a specimen of every drawing done throughout the year in a drawing-book. Stick one in the book—not necessarily the best one—and you will have a record of the year's work, and a groundwork for future use.

Where children are concerned a little praise is worth much more than a lot of grumbling.

Do not lose sight of the cultural value of art, music, and literature. We are often too matter-of-fact in our treatment of these subjects, and forget the great importance of their appeal to the emotions.

Recognize that fundamental principles must be learned, but the aesthetic value is greatest of all. Therefore, surround the children with objects of beautiful shape and colour, which will in time permeate their minds and endow them with that elusive accomplishment known as good taste. We are all creatures of our environment. Induce them for a time to forget the drabness of the outside world, and make them "see visions and dream dreams."

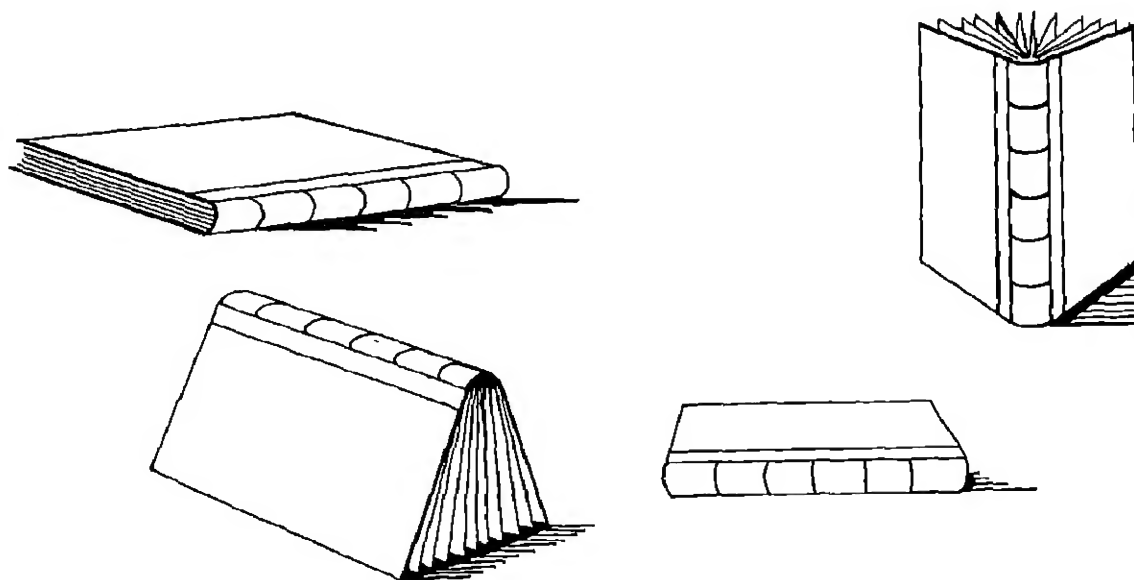


FIG 10

Object quickly Sketched in Different Positions

MODELLING

ORGANIZATION OF THE COURSE

THE aim of this chapter is to describe a modelling course suitable for school children, and has nothing in common with the training of young artists as practised in a School of Art. The approach to the subject is from a very different angle, and often the methods will seem to be quite contrary to those used by teachers in training Art students. Careful reflection will justify the apparent clash of principles.

We hope in the Junior School to train children to see and to take pleasure in appreciating what they see, whereas this enjoyment is already part of an Art student's equipment. A student is an apprentice to his trade, the children are apprentices to life, and have not yet specialized.

In the schools, modelling has always been recognized as a sound means of expression for Infants, but has generally been discontinued in the Junior School owing to the pressure of other subjects. The periods for handwork and drawing are shorter of necessity. Modelling is the earliest and simplest method of representation for little children, being three dimensional. The more conventional method of representation, the two dimensional, gradually becomes natural to them as they grow older. With this advance of skill in drawing the need to continue work "in the round" has not been considered urgent or perhaps even necessary. There is also a question raised as to how much modelling helps in teaching drawing, and work in form alone has not been considered for its own sake. There is so much ground to cover in teaching colour, design, and illustration that teachers feel they must devote the short drawing periods to work on paper. The answer to this whole question is only to be found by taking one lesson in modelling to three or four in drawing, and keeping to a course throughout the school.

Modelling as an Aid to Drawing

We can draw form convincingly only if we thoroughly understand it, and we can most

completely understand form by modelling it, by "making it" as the children wisely say. This chapter deals with modelling, or building up: the reverse method called sculpture, or cutting down, will hardly be touched on. In our schools we can hardly hope to do more than model in clay, with perhaps an occasional excursion into casting in plaster. Much vague and unhappy drawing in the schools is due to the children's lack of grasp of the true shape of the things they are trying to describe in line or mass. This form can be made clear and truly grasped by feeling and handling the object to be reproduced, and by previously modelling a similar form, and so realizing it completely.

When we use the word "grasped" to convey the complete understanding of anything, we are unconsciously describing one of our earliest ways of learning. A baby wants to touch, and incidentally taste, everything. He learns so much by the sense of touch that, by the time he can talk and take his place in the world with other children, he has stored up a fund of information.

For example, we do not always realize how it is that when we see silk or fur or hessian we also know how it feels. Why do our eyes recognize the feeling of the texture? It is because in our infancy we taught ourselves, by *touching* a surface which looked bright in its lights and crisp in its shadows, that a smooth sensation was conveyed. This smoothness we learnt was characteristic of the material called silk, which shone. In the same way we learnt that a surface broken up into small lights and shadows would feel coarse and harsh, and that one with large lights and shadows with graduated edges would be soft to the touch. We stored this knowledge in our memories, and have used it ever since without questioning its origin. In the same way we learnt to see the form under the texture, gradually realizing the fundamental shapes, the cuboid, sphere, and cylinder.

Remembering that this sense of touch can help throughout our childhood to make smooth the

path of intelligent observation and description, picture the satisfaction of being allowed to shape objects in a plastic material, and to see that they are good! We can continue to learn from our sense of touch all our lives, and clearer thinking will result from training this sense.

We are at the moment considering modelling as the handmaid of drawing. With this in mind, allow the children to hold and to discuss the make of the things they are to draw, as you would if they were modelling them instead. Let them picture for themselves how they would begin to construct the object, or how the natural plant or animal grew to its maturity, and where and how it moves. The satisfaction of a class who are allowed in turn to hold and turn over and possess the subject of their drawing lesson is a complete vindication of this statement.

This brief summary of the case for modelling, on the ground of its help to good drawing, will perhaps seem one-sided and, therefore, unconvincing. Yet, as consideration shows that other subjects involve the appreciation of the three dimensional space, and clear thinking is impossible without its complete development, perhaps there will not be any need to enlarge further on this point. In Geography, for instance, a modelled map of the school buildings, after they have been explored, will help the children to understand the map of a country. Drawing is clear thinking put down in line or mass.

The masters of painting, if not also sculptors, have used modelling in order to acquire a better understanding of form and balance. Why go a long way round when there is a direct route, and we are short of time?—and all teachers are short of time.

Paper Cutting

To give an example of the application of in-the-round methods to help flat representation, a description of the place of paper cutting in this connection will be useful.

When we are dealing with little children, or backward children, drawing on paper in mass or line often presents great difficulties. They wish to show all sides at once or even the interior of a solid; they are dissatisfied with the result

It has been found that by first modelling an

object and afterwards cutting out the same object in paper, a stepping stone has been placed between the three and two dimensional methods of representation. With scissors and paper the child is making the shape from one point of view, which will be the front or direct side view, as the child instinctively avoids the difficulties of perspective. When this paper shape is stuck on to a background the child has a flat picture of the object, arrived at without conscious simplification. The introduction, later, of pastel and brush to represent the same aspect of the same object is then helped by a memory of its silhouette. A class rendered chaotic with incomprehension has been turned into a class of busy artists in a few lessons by this simple expedient. The children can apply their experience to the rendering of all shapes after experiments with one or two, always supposing the difficulties are carefully graded.

Modelling: An Independent Subject

Now we must consider the question of modelling for its own sake, and as a means of expression complete in itself. It will be best to consider first the history of sculpture in our country, a short review of the place it has held in picturing the thoughts of our countrymen up till the present time. This will help us to know what latent abilities we may expect to find in the children, and what response to teaching. From early times sculpture has been one of the most popular and well-loved means of conveying our religious fervour, our pride in human achievement, and our joy in natural beauty.

History of Sculpture

In every country the art of the people has shaped itself along the lines dictated by the available materials. In these islands, stone and wood being plentiful in most districts, we find the craftsmen gaining complete mastery over these. Alabaster, perfect marble, and clunch were, of course, found locally, and in their districts an art was developed which kept pace with the work in wood and stone.

At first the tools were simple and crude, and the work reflects these characteristics, but is

always wonderfully decorative and full of expression always in harmony with the thing decorated, from a small font to a cathedral.

Every one knows the wonders of Norman and Gothic work from familiarity with a local



By courtesy of The British Museum

FIG. 1

Gothic Figure, Christchurch, Hants.

building or a passing acquaintance with some well-known national masterpiece. We realize that the craftsman artists of these periods told the unlettered people of their time more than words could convey of the great human aspirations and emotions.

The flowering of the Gothic period, in all the arts, is being more and more appreciated, and enough sculpture remains to show how triumphantly it held its own with the arts of painting, stained glass, metal work, and embroidery.

Following what have been called the "staid achievements" of the Perpendicular style, we have the arrival of the classic Renaissance in England. Henry VII introduced foreign designs and foreign workmen, our native tradition was broken. Sculpture, after the Reformation, be-

came secularized and, no longer following the national traditions, became no longer a spontaneous means of expression.

True, we found other means of expression, as individuality, in people and in nations, will out. Stuart carvings have a quaint and decorative character, something native, but are not to be compared to the preceding periods in mastery of material and artistic feeling.

By the Georgian period the fat gentlemen in Roman togas of doubtful drapery or scanty armour had put the final touch of artificiality on English sculpture. After this comes a gradual revival in Victorian times, a struggling back to sculpture through modelling, mostly through statues cast in bronze, though there are a few marble figures worthy of note. We have been steadily progressing toward sculpture during the last half century, and owe a great deal to foreign influence, and an increased appreciation of our own great past in the art of carving.

It seems that Art in the future will be international and local influences much less apparent, though we must always see the influence of an artist's national outlook on his work.

Much of the recent sculpture in England, both in the round and in relief, is truly sculpturesque, and has consequently been much misunderstood. As "men in the street," we have the Georgian and Victorian tradition too much with us yet, we have so many monuments of that period to mislead our taste. A walk down the Strand would be a good illustration of the growing-pains of the intermediate period—the late nineteenth and dawn of the twentieth centuries. Here we find the artist groping for sculpture, and losing himself in memories of bronze figures flying out of stone backgrounds. The architectural design of the buildings has been ignored, and the figures,



By courtesy of The British Museum

FIG. 2

Chess Man from Isle of Lewis

though accurately modelled, have no decorative relation to the building they are supposed to embellish. Stuck on at all angles, restless, and without unity or pattern in light and shade,

the whole design, and necessary to it. We have arrived at a new period in the history of sculpture in our country.

Training in Discrimination

After this glimpse at the history of sculpture, we shall see that, besides the actual teaching of modelling, there will be training in taste, which goes hand in hand with good instruction in technique.

The rest of this chapter deals with methods, so before we concentrate on technicalities a word on this necessary training in taste may be helpful.

It is of no use to talk to the children about "good taste," "simple mass," and "unity of design"—it calls up nothing in their minds, or perhaps in the case of an imaginative child some totally irrelevant picture.

We must take them to see these qualities as they exist in buildings, monuments, and objects of art. Large towns have many good buildings, most small towns and villages have a beautiful church or domestic building which is an illustration ready to hand for the teacher. The class can enjoy the carving in its proper setting, and in relation to the architecture.

There are, perhaps, quaint heads on the corbel table of the church tower, on the drip stone of doors and windows. Inside the church there may be figures carved on the rood screen, or on the capitals of the pillars. The pulpit and font are often beautifully proportioned, and the decoration most suitable to the material in which they are made.

In the case of domestic architecture, we can find in Tudor buildings brackets and door posts carved in wood enriching

the severity of the timber work. The Renaissance house has lovely overdoors, and carved canopies to doorways, lending dignity and importance to this important feature of the house. There is no need to point out what can be found in our better-known cathedrals and abbeys, and the teacher fortunate enough to live near



By courtesy of

The British Museum

FIG. 3

Theban Noble and his Wife, 1420 B.C.

they ape bronze and fail as stone. But for all this there is a real freedom and a largeness which promise that sculpture is on the way.

Since the War we have had some wonderful memorials produced, simple in mass, and suitable in detail, carving, and lettering. Sculpture on the new buildings is considered as part of

one of them will have a wonderful supply of examples.

The larger towns have museums, and the



By courtesy of

The British Museum

FIG. 4

Sen-Nefert, 1400 B.C.

beautiful work stored there will be of use, particularly on rainy, cold days. It will not be quite as satisfactory to tell the children where the carving once stood, on what part of the building it was to be found. But there is a big advantage in having an object near enough to be inspected thoroughly and enjoyed in detail. The difficulty of educating the children's taste is great, and must be done without dictation

and gradually, they will be unimpressed and maintain their original opinion if coerced.

The practical work in class will be a great help to clear understanding of what the children are shown. Their joy in a photographic representation of nature will only slowly give place to an appreciation of the design and meaning inherent in a work of art. This is why seeing a building with its carved decoration will be of more help to them, aesthetically, than seeing a separate object in a museum case.

It will be a great delight to the children if the teacher can bring a small complete piece of sculpture to school, there are casts made of excellent carving, and these can be bought at South Kensington Museum, at quite reasonable cost. There are few casts to be bought in shops which would be any training in taste—many of them are sadly the reverse. Remember that when we begin modelling with small children we cannot expect them to see or realize a large object—these visits will be planned for the children who have already done small work in clay. You have only to remember how, as a child, you saw only the things near at hand, and far horizons had no existence for you. We realize larger objects in their completeness as we get larger. Return to a street you knew as a little child, and it is the railings, door steps, and pavements you are familiar with; the street complete with houses, road, and pavements seems entirely new and unknown.

The teacher who is taking a modelling course would do well to make a collection of photographs and post cards of sculpture. In the periodicals there are often reproductions of modern work which are most helpful. These pictures can be hung up for the children to study and enjoy, and will prove a great source of inspiration.

The British Museum and Victoria and Albert Museum have post cards of carving well within the range of the children's comprehension. The little chessmen in the British Museum are wonderfully sculpturesque, and even a child of five has been known to enjoy them without prompting

MATERIALS AND EQUIPMENT

Necessity of Using Clay

This scheme does not take into consideration the use of anything but modelling clay—as supplied to Schools of Art; substitutes for clay are not so clean or so easily handled. The children's fingers are not strong enough to control any less plastic material than properly prepared clay.

Powder and Block Clay

This modelling clay can be obtained in powder form or in the block. If the powder is used it can be prepared as follows. Take a shallow enamel bowl, about a quarter fill it with clay, and add hot water, stirring with an iron spoon. Let the water slowly mix with the clay by running it in gently. Take the clay into the hands, as much at one time as can be handled easily. The clay must be kneaded with the hands until all the water is absorbed and no little lumps of clay can be felt. This can be rolled into bars, making sure that they are not too limp or too stiff to the touch. If they are too dry a little water will soon make them plastic, kneaded into the drier mass. If the clay feels too moist and sticks to the hands uncomfortably, add a little dry powder and work this in until absorbed.

Stack the rolls of clay crosswise in the bowl, and cover them up with a soft rag soaked in water; then cover all over with a piece of waterproof material. The clay will keep in good condition for a very long time if kept damp in this way.

If the clay has been ordered in block form it will be damp but not damp enough for use in class. It must be cut up into small pieces with a wire or stout string, as one sees cheese cut. This clay must be kneaded with the addition of water as in the case of the dry powder. It will be more heavy to handle, and the inexperienced will do well to get clay in powder, instead of the block.

Quantity to Order

The answer to the question of how much to order at one time will depend on the number of

children using the clay. A seven-pound bag of powder will make enough material for a large class, their individual models being fairly small. If the seven pounds is multiplied by the number of classes taking modelling, and then a little more is added for keeping in reserve, it will be enough for a start.

After the Lesson

As it will prove impossible to save all the work done in class, as one does in the drawing lessons, it is generally advisable to save some representative work and store this on a shelf or in a cupboard. The clay when dry can be broken up into powder again, and used as before. The children need not see this destruction—it is much too disheartening, and can always be done in their absence. If the work done in class is lifted from the boards with a wire tool it can be returned to the bowl of wet clay, and is usable again without more trouble.

After the lesson do not lift from the board the models to be saved for reference, but allow them to dry slowly until they lift without sticking and can be stored away.

If, through lack of experience, the teacher finds the bowl of clay has been too much damped, exposure to the air or by a fire will soon dry the clay enough for the children's use. If the clay is too dry, on the other hand, it will be necessary to knead it all up again; this soon becomes easy with practice.

Preparing for Modelling

When handing out clay to the class be sure that it is in good condition—neither too dry nor too wet. The children should be able to handle it easily, but should not get the clay stuck all over their hands. An overall on each child and a piece of newspaper under each board will ensure a clean classroom. (One of the PRACTICAL JUNIOR TEACHER, Volume V, charts will show a craft-work apron, as suitable for girls and for boys, easily made by children of either sex.) If any clay is dropped on the floor it must be picked up at once, or it will be trodden about the

room. A dust-pan and brush are useful, and the children should take a pride in being clean and efficient over their work. It is a very miserable, and much harassed, class that is given badly prepared clay with which to express itself.

Give out a small lump of clay to each child when the rest of the equipment is ready, and later in the lesson add to this supply as needed. It will be found that the children's hot hands dry the clay quickly, and then it becomes useless.

Other Equipment

The rest of the equipment is very simple—a little board for working on, or if this is too expensive a square of three-ply wood or a

former with one end pointed and the other end square, the latter with one end square and one oval.

Fingers are the best tools, and if the children are seen to be using their tools when it would be better to use their fingers, just give a lesson or two without any artificial aids at all.

Finishing-off of Models

A slab of clay made to suit the shape and size of the model will be found very useful. The modelled object will cling to this slab and lie more steadily when finished, and it makes a frame to the finished work. It should always be rectangular, and cut neatly at the edges with

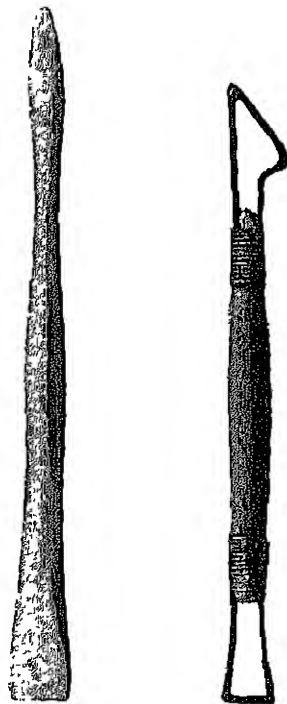


FIG. 5
Modelling Tools

stout piece of cardboard will do to start with. Naturally a board is best, as it is heavier and does not slide about. The tools can be two in number, a wooden one and a wire one—the

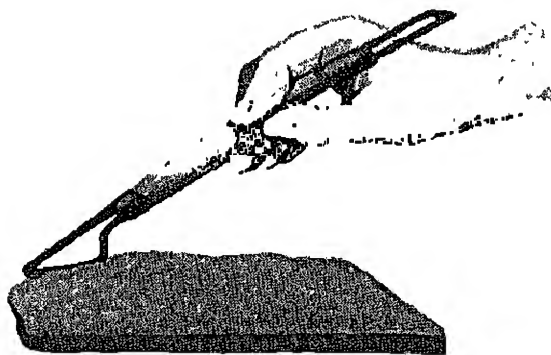


FIG. 6
Cutting a Neat Slab for the Model

the tool. This makes a very good exercise in proportion, and also in neatness. The sides must be parallel and the surface flat, and must not be left ragged. This slab can have the child's name or initials written on it with the wooden tool for purposes of identification later. The clay models will be very brittle, and must be handled with care when dry—there is no way of making them strong, though painting the surface with shellac will preserve them a little longer. The only permanent way to save a clay model is to cast it in plaster of Paris. This can be done by the teacher who has had lessons in casting. It has nothing to do with class work, and would be necessary only if some work was needed for exhibition purposes.

SCHEME OF WORK

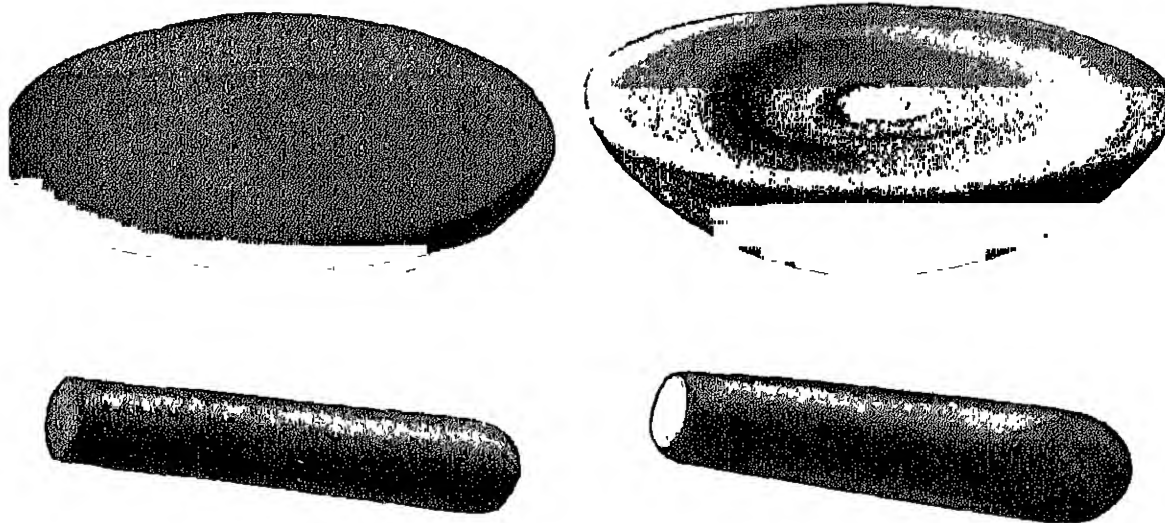
There are two broad divisions to be recognized in the subjects set throughout the modelling course—the representational and the imaginative. These could be alternated, not rigidly, but as seems best for the particular class in question.

Learning to apprehend form and construction through the study of natural and fashioned objects will be to the children like learning to pronounce, spell, and understand the meanings

too much emphasize this truth. A list of correctly spelt and understood words is of no use to a child as a *list*; they must be used to clothe thoughts and be written down.

Representational Work

Through the cylindrical form of a jam pot we learn to tackle all objects, animate and inanimate, with that fundamental shape, adding the



Stage 1. The two Sections

Stage 2 Sections pressed into shape with the fingers

FIG. 7

Representational Modelling First Two Stages of a Mushroom

of the words of their language. Using these forms afterwards to express an idea, or to tell a story, will be like putting words into a sentence. If we over-stress the technical side and magnify the already serious difficulties of representation, we shall kill the joy of creation, so we must strike a happy middle course, just as we endeavour to do in other subjects.

The correct modelling of a mushroom, for example, is not an end in itself, and we cannot

detail which is going to convey meaning and interest to other people. A boot box can become a cathedral with the addition of suitable detail.

Remember that teachers of modelling as well as teachers of drawing have thoughtfully to consider this very real problem—that of keeping the creative work of the children vividly alive, and at the same time training hand and eye so that there is no hampering of expression by ignorance of form and by clumsy technique.

The work of heads and hands must run smoothly with the urge of creative ambitions. The representational division of the course will include copying natural and fashioned objects,

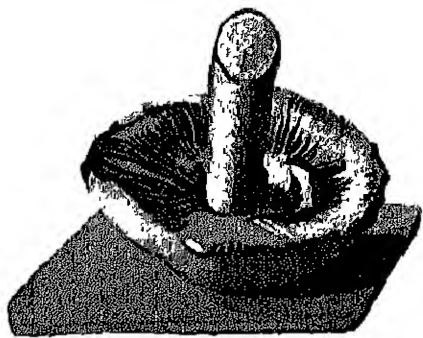


FIG. 8

*Representational Work. Mushroom, Stage 3,
Complete on Clay Base*

a flower or fruit, a top or a wooden soldier, a beehive or a church.

Imaginative Work

In the imaginative division the knowledge of form gained by representing the models given as copies will be used to illustrate stories, myths, legends, and abstract ideas. Nursery rhymes are very useful with little children, and fairy stories are packed with good modelling material. It is as possible to make a charming composition in clay as it is in paper cutting, painting, or lino-cut. Children's imaginative work is always arrangement of known shapes, clothed with their individual impressions of those shapes, of course, and arranged according to meaning and interest.

Necessity of Minimizing Interference and Criticism

The results are often interesting artistically as pattern, and also as the expression of the emotion we call fine art. Children are naturally intensely honest in their work, and the nearer to the truth as they see it their models become, the more complete is their satisfaction in their work. They arrive by simple means at a wonder-

ful degree of aesthetic feeling; as with true artists, the urge to express the thing they feel is so strong that they arrive on its way when the more sophisticated adult is lost amongst detail and technical worries by the way.

To realize this is one of the first essentials of good art teaching; we rush in to correct some small error in proportion, missing the significance and beauty of the whole as the child realized it. Sometimes Mr. Punch's advice to those about to get married would with advantage be remembered by those about to criticize—"Don't!"

Two Vexed Questions: Relief Work and Colouring

Two interesting questions must be discussed and left to the teacher to answer. It is impossible to dictate in matters of art instruction, and very dangerous to limit the range of the imaginations of other people.

The first question will be how and when, if ever, to introduce relief treatment. In this chapter it has not been thought advisable to include such an advanced means of expression. As Professor Ed. Lanteri has said in his book *Modelling*—a guide to teachers and students—"the effect of perspective has to be produced by a superposition of planes. These alone can give to a flat surface the appearance of roundness which the object possesses in nature. The study of relief offers, therefore, much greater difficulties than work in the round, which is a positive thing, whilst in relief—beyond the outline of the figure, all is artifice. It is a grave mistake to let young beginners work in low-relief, as I have often seen it done!"

He goes on to explain that any one can draw an outline on a clay background, and fill the outline with clay shapes, but this will not be treatment in relief. The only kind of relief suitable for children's work would be even simpler than that of the Egyptian incised work. Lay a ground of clay, draw the design on this with a pointed tool, cut away the ground with the wire tool, keeping the ground and pattern in two flat planes. The alternative method would be arrived at by cutting away the design and leaving the ground on the higher level.

The Egyptian sculptor drew an outline on

SUGGESTED SYLLABUS FOR MODELLING

Stage of Progress	Division	Shape of Objects	Some Examples	Communal Models
I.	Representational. Imaginative.	Sphere and cylinder	Small fruits, berries, seed pods. Top, toy mug, nunepins, wooden toys of circular shape. The Three Bears' porridge bowls, Jack Horner's pie, etc.	Tea-set complete.
II	Representational. Imaginative.	Sphere and cylinder	Mushroom, Brussels sprouts, flowers, buds, leaf-buds. Shuttle-cock, jam-pot, saucepan and lid, casserole. Illustration of stories and legends in which these shapes can be used.	Things suitable for a market stall or shop window—to furnish stall made in woodwork class.
III.	Representational. Imaginative	Cuboid.	House, church, castle Red Riding Hood's cottage, Sleeping Beauty's castle	Village. Farm and barns. Monastery or castle.
IV.	Representational. Imaginative	Fundamental shapes combined	Simple flowers with stems and leaves, twigs and leaves, berries on stems Good models from cast or objects in the round.	Group of flowers and fruits in season.
V	Representational. Imaginative	Laying models.	Frogs, tadpoles, mice, guinea-pigs, tortoise,	Family groups in suitable setting, with food and home. Design for bird bath or fountain.
VI.	Representational Imaginative	Human figure.	Figures from description and model. Drapery. Illustrations of abstract subjects, e.g. Sorrow, Fear, Hope. People from story or legend. Designs for novel posts, monuments, garden figures.	Group of figures illustrating some story or historical subject

the plaster or cement and next incised the outline, slightly rounding the enclosed form toward its boundaries. These forms were then coloured, but give a true flat picture even when the colour has worn off the surfaces. A class of children who had seen this type of relief in a museum would be able to undertake this very early method.

The other very important question we must consider is the colouring of dry clay models.

Can colour be introduced, and when will it be suitable to use colour, if ever?

If we wish for moral support we only have to turn to sculpture in all the best periods of history. Colour has always been used with form, both inside and outside in the decoration of buildings, and in separate statues. We often overlook this fact, as weather has worn away the paint and left the beauty of the form expressed only by the light and shade. Egyptian and Greek sculpture was coloured. Norman interior carvings as well as wall surfaces were coloured, and there are endless other examples of the use of colour over form in good art.

What must be emphasized, however, in relation to our work in school, is that colour was used to decorate and not to imitate. To model a leaf or a toadstool and then paint it in its natural colours is to try two methods at one time, and leads to vulgarity and "bad form" in art.

If we have designed something with the children, and colour will add to its decorative value, then we can feel free to joyfully include colour. We did not design the leaf or the toadstool, we made it in clay to learn its form and construction. If we wish to paint it too there is the painting lesson in which to enjoy its colour. The clay will not allow of a naturalistic blending of colour, but will take flat paint for decorative purposes. Poster paint is the best medium to use, as the colours are bright and opaque.

Colour can add to the decorative value of architectural models, and admit a little detail which cannot be expressed in clay. A village of cottages may be painted to represent the building material used, such as roofs of slate or tiles.

Small and Large Subjects

In connection with the chart of suggested subjects for class teaching (page 951) there are a few explanations necessary. Small models are best, things which the children can hold for themselves and turn about to examine. We are apt to forget that things which seem small to us may be large to the children. In modelling particularly we must remember that little fingers are less muscular than large ones, and the clay will be heavy to children when it seems light to us. A large object can be introduced as a model if the class sees it from a distance and a small copy is made, but it is not the ideal



FIG. 9

Dandelion Bud and Clock

way, for the children do not learn the form by holding it.

A class experienced in modelling will be quite capable of this reduction from a large model to a size they can hold. The advantage in this type of lesson is in part the possibility of introducing a single beautiful object which the teacher has discovered. Also, when the time comes to take the class to a museum, the children can memorize anything which has specially appealed to them, and reproduce it to scale. If they have chosen something for themselves it will be of great interest to them to try to make it again in clay, and a great deal can be learnt from this type of copying.

Shapes

The next explanation of the chart will be in reference to the shapes, the progression of forms suggested, and the reason for their order on the syllabus. The three fundamental forms, the sphere, cylinder, and cuboid are understood by little children in the order given.

The cone and pyramid, which are developments of these forms, will be introduced later,

but follow quite easily from the others in the child's understanding.

In modelling, there is not only the realization of the shape to be considered, but the difficulty of making it in clay. The first movement you

clay on to the board in order to enjoy the flat surfaces which come so readily on the rounded clay. Following this lead, it is suggested that round objects, sphere and cylinder, shall be used just at the start of the modelling course.



FIG. 10

Acorns Built Up and Put Together

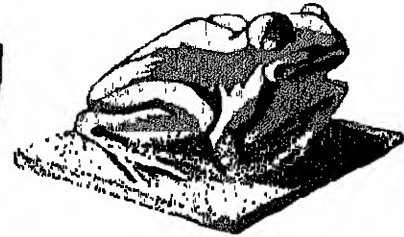


FIG. 11

Frog Modelled from Life

notice, when the children have a lump of clay handed to them, is a rolling one in the palms of the hands. They use the palms rather than the finger tips at first, as the clay offers some resistance to manipulation, and hands are stronger than fingers. Later they will start to dab the

One must remember that some children will advance much more rapidly than others, and these brighter ones can be encouraged by having more to do. The resource and cleverness of some children in the class will help the slower pupils wonderfully. The cuboid forms will now

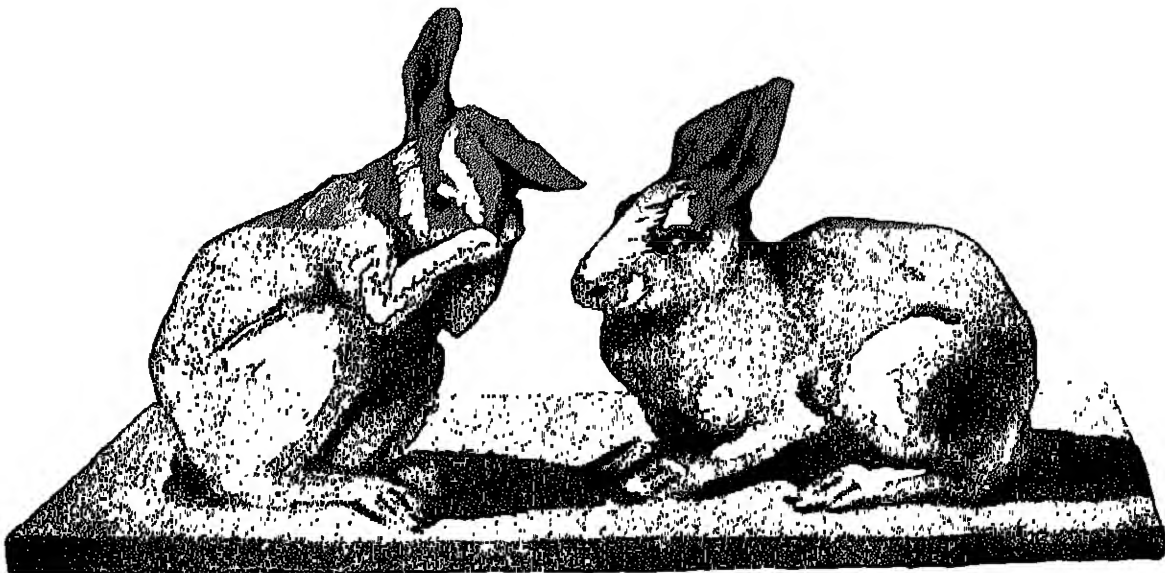


FIG. 12

Rabbits Modelled from Life by Juniors

be introduced in very simple objects, as accuracy is so necessary for the production of a neat and satisfactory piece of work.



FIG. 13

Junior Modelling from Stuffed Specimen of an Owl

Animals

As soon as the class has shown that handling the clay and controlling it are accomplished, and a ready appreciation of form and detail too, begin to add living creatures to the widening syllabus—small creatures with well-marked form and a texture which does not disguise the underlying structure.

Tadpoles and frogs are usually a great success, they can be kept in perfect safety from small fingers in a glass aquarium in the centre of the classroom. The class will have seen them and learnt about them in another lesson, and the necessary memorizing of their shape and movements is excellent training. Any small creatures will be of great interest, newts and goldfish, mice and guinea pigs, in fact all the available small things which can safely be introduced into a classroom.

These, of course, will be modelled in the round, and resting in such a position that supports to the clay are unnecessary, posed in a sculpturesque attitude to be safe against toppling over or rolling about.

It will be found that, after a series of lessons on inanimate nature, the class is delighted to have a living creature to model. The very difficulty of seeing the form, and choosing which pose to render, out of the many taken by the unconscious model, gives the class a tonic and thrill which work magic with the results. This, too, makes a very good introduction to lessons on the human figure, and can be used to help with the decoration of many things.

To conclude these remarks on shape and types of models for class work, it should particularly be remembered that no model should be made which cannot stand easily when put together, nothing on too small a base or top-heavy. We are on our way to sculpture: less stable things can be represented in the drawing lessons.

No object should be artificially flattened or treated in low relief, the model should be finished from every point of view.

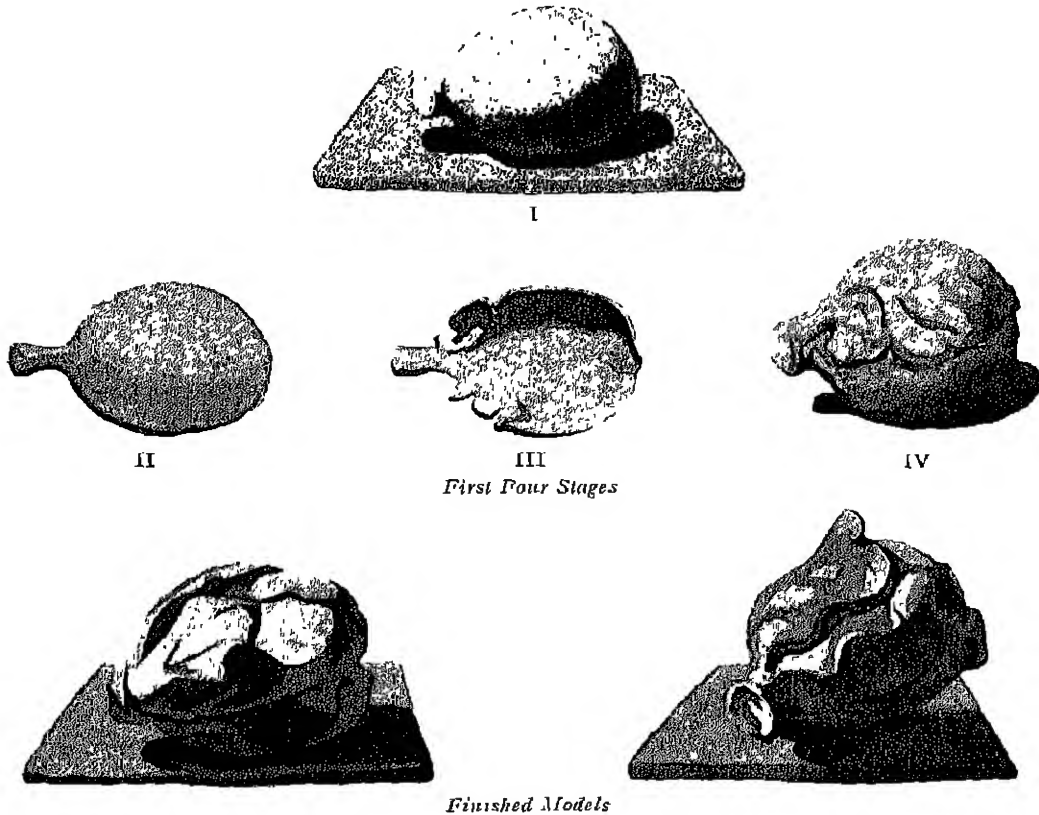
Though the range of models will be limited, there are so many suitable ones that there need be no shortage. It is most desirable to have both sides and back as well as front views properly modelled, or we are merely doing what would be better rendered in line on paper.

Figures

The pose in human figure work can be selected to render the figure self-supporting—only draped figures could stand upright. The introduction of armatures and even less elaborate supports is out of the question in class work.

In all stages of progress avoid forms which are too subtle and undefined in shape: a banana is not easy to model for example. Much insincere work is produced by the class which is given an object apparently easy, but in reality

it without interfering with his neighbour's view. A small object is best, one which can be rendered full size. The children's attention can be drawn to its shape and general structure, and any individual differences can be talked about.



Finished Models

FIG. 14

How to Model Brussels Sprouts

of complicated structure under a smooth exterior. Children are very honest and know if their work is only superficially good.

Inanimate Subjects

Let us consider first the presentation and treatment in clay of natural and fashioned objects.

The ideal thing is for each child in the class to have a copy of his own; he can then examine

A class of children which has been trained to observe intelligently will quickly learn all about the model and take pride in their quickness. They can then be asked how they intend to go to work to make their model in clay: where to begin, and how to build it up, so that the construction is sound before the detail is added. Each thing will present its own difficulties, and after a lesson or two has gained the child added experience, the analysing will be clear and orderly. The shape of the clay slab will be

discussed, and later measured to form an adequate background for the finished model.

If we have carefully chosen subjects which lend themselves to reproduction in clay, and have not overstepped the limitations of the material, we shall soon arrive at very good results.

There must always be a core of clay shaped to the semblance of the whole object on a smaller scale; this will then be built upon with small pieces carefully shaped to describe the surface form. Remember that clay modelling is a process of building up, and this must be done in small, well-drawn pieces and not clumsy lumps of clay.

For example, when a leaf shape is to be made, take an oval piece of clay into the fingers and press it gently outward at the edges, shaping it all the while to a characteristic outline. Do not press the middle of the oval shape, but allow this to be thicker than the clay at the edges, then add ribs or veins with careful modelling in small added bits of clay. This leaf will be its true width at the edge, but a little stouter in the centre; it will then allow the modeller to bend it and curve it to its natural growth, without breaking in two or cracking. It can be joined to the stem by its stalk and rest upon the clay slab. A real leaf does not touch the ground with all its surface, so notice where the leaf, whose portrait we are making, touches and supports itself.

The children must learn that to understand all about the placing of their model on the slab, so that it looks alive and not a flattened thing, they must see it from the sides as well as the top. They can lift their boards up to the level of their eyes, with the real leaf and the modelled one side by side. In this way we prevent the flattened, dead-looking rendering which comes from working from one point of view only. It is a great relief to small children to get up and move about at their work; there is a real need to do this in modelling, and it is often better to get the class to kneel and look along at their work for this very reason.

Animate Subjects

The study of animate subjects must proceed along the lines laid down for those which are

not alive. The first difficulty will lie in the understanding of where the creature moves, and how it moves.

A simple explanation will be quite necessary, with clay sketches made at the same time to illustrate the structure. Once the children have grasped the divisions of head, body, and limbs, the movements can be realized. They must choose a pose which will be easy to represent in clay, and watch for a suitable one as the model moves about or settles to eat or rest.

The parts can be modelled separately and then properly attached, and afterwards posed in position on the clay slab. There will then be detail to add before the work is complete. The effort is in picturing the form and pose much more than in making it in clay: the children find a way to do what they have in their minds to do.

It is only when they have no proper understanding of the subject that slipshod work is produced.

Communal Models

There is a wide field of subjects suitable and interesting as communal models. Each child can make a complete part and feel that it is part of a whole scheme, and not lost in the whole. They do not enjoy working at anything which cannot later on be identified as their own, and this feeling is shared by grown-up people more often than not.

The training provided by the modelling class can be used by the geography and history teachers in the illustration of their lessons—communal work being very useful in these subjects. But there is much to be said against turning the modelling period into a geography or history lesson. The time allowed for Art is very short in most schools and other subjects are often better provided for in this respect. If the children concentrate on learning to model in the modelling class, they will not forget how to apply this knowledge of technique to the illustration of other subjects.

So in the ideal correlation of subjects we can picture a class arriving to model a Norman castle or a South Sea island with already a complete knowledge of its form and history.

The fortunate teacher of Art will then be able to help with making the model in clay, keeping a watchful eye on scale and proper proportion of detail, so that the finished work is well and truly made, and primarily a lesson in modelling.

esque and solid manner—this will naturally limit the work, but it will preserve the children's taste for what is right and honest in modelling as an art. Take architecture, for example: we can make a cottage or a Norman church or a

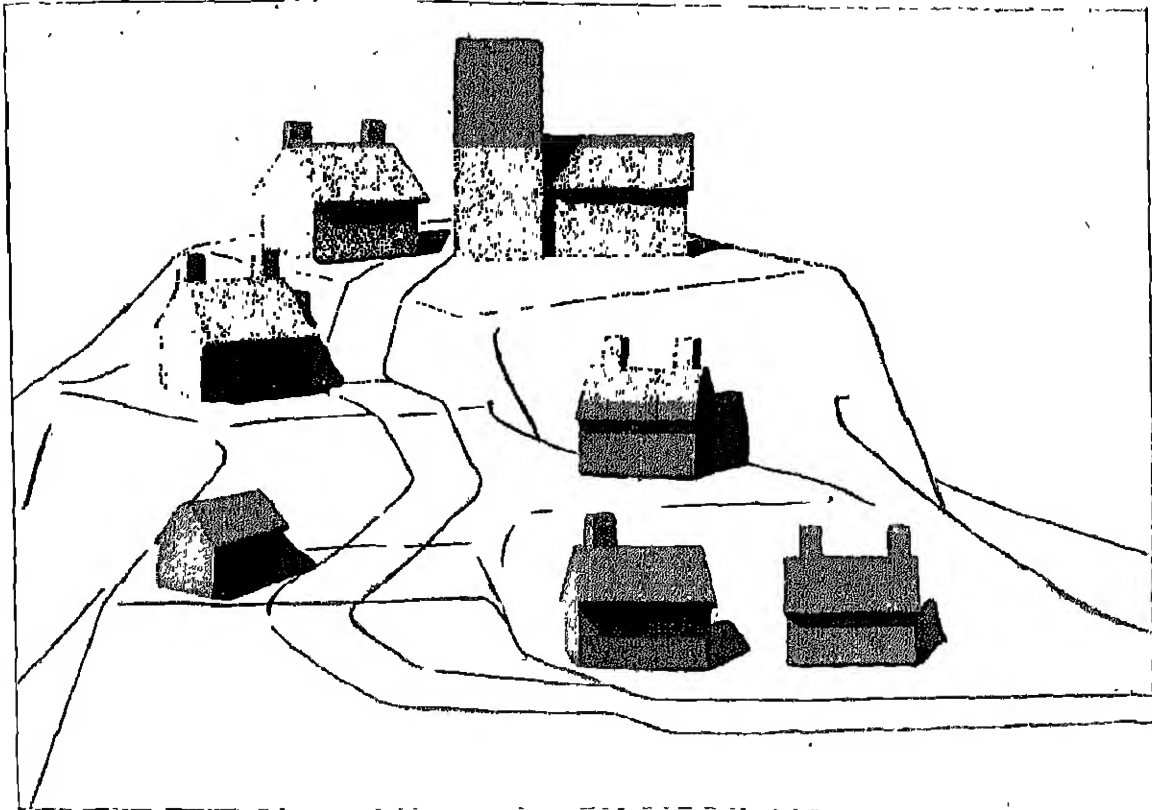


FIG. 15

Part of Communal Model of Village

(For coloured complete model see Plate opposite p. 960)

So many communal models are illustrations of history by way of architecture, or geography by contour maps, that it is as well to remind ourselves not to poach on the modelling tune with descriptions which rightly belong to another period in the syllabus. In connection with models for history or geography or literature, be very careful that they are well within the possibilities of the material. Do not go beyond what can be constructed in a sculptur-

tithe barn, a Tudor manor house or a beehive hut—these are very simple and sculpturesque. But any attempt to model a cathedral of the decorated period, a Renaissance mansion, or a modern block of flats, would involve us in so much treatment of detail, and subtle proportion of part to part, that it could not be a success in clay.

If we are making a model for geography it must be all clay, and expressed entirely in clay,

no other materials being added to "make it real."

There are coastlines, and islands, and villages in valleys, all quite within the range of a modelling lesson. The details, such as boats and carts and people, must be left to the imagination, they are unsuitable and will be too small to make to scale, even if it were possible to model them.

The literature lessons may not find much help from the modelling class, but sometimes a figure subject lends itself to treatment in form, and in the younger classes stories can be illustrated amply by each child of a group of children taking one subject from the story and modelling it. These can afterwards form a group illustrating the story as a whole. For example, the story of Cinderella gives great scope, one child choosing to make the shoe, another the coach, another the mice, and, of course, there will be a demand to make Cinderella, the Prince, and the Fairy Godmother. The teacher will have a very busy time trying to keep these objects in scale, but if they are to form a composite group they must be in proportion.

"The Three Bears" and all their furniture can be constructed in clay. Red Riding Hood, too, can be so made, but the grandmother's cottage will be too large to attempt if her bed is in its proper relation to the rest of the objects in the story.

In the case of modelling architecture, already mentioned, a very charming communal model can be made of a village, complete with church, mill, shop, farmhouse and barns, inn, and cottages. It can be a period village or a village of nowadays with several periods represented. It is in models of this kind that colouring with poster paint might be allowed. The ground, on which the village is placed when the models are dry, can be either coloured paper or cloth, and in the case of a hilly district a pile of books covered with casement cloth will make a convincing setting.

Norman castles or any building in stone must not have the stonework indicated unless it is done with great care and respect for building construction. It will be much more satisfactory left in modelling without any addition of painted stone work, than painted carelessly and without regard to scale.

Timber work on Tudor buildings can be shown in modelling, or, if very small, the lines can be painted on; these, too, must be drawn with proper appreciation of their relation to the support of the brickwork.

Figure Work

When the children at any stage of their imaginative work ask the teacher if they may model a figure to help their picturing of the story, this can be allowed, with reservations.

If a class is sufficiently intent on making the object agreed upon as illustrating the subject chosen, the children have no time to spare for adventures of their own. But quick members of the class will often be done first, and full of energy for more work. Do not check ambition unless it is contrary to good taste in modelling.

There can be no special class teaching in this case, so if the child has not had lessons in figure work it must just be left to work from memory. The figure cannot be in proportion to the rest of the model, but must be a separate piece of work.

Now, when we come to serious study of the human figure in the round, we have a simpler task than we have when we have to draw figures on paper. For the same reason that a mug was easy to make with its handle in satisfactory relation to the whole, and in its proper position, when modelling it, a figure can be better made in three dimensions than in two—we have not the difficulty of foreshortening, due to the perspective.

Before beginning to model it will be necessary to speak of the proportions of the figure, and still more necessary to remember the movements of trunk and limbs.

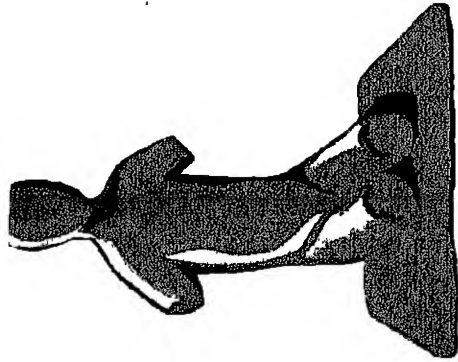
The actual proportions when mentioned once can be referred to as the lessons proceed; the children will always be able to see when the head is too large or the legs too short, when their attention is drawn to these mistakes. (See p. 895.)

The matter of the movement of the joints is very vital; the children should stand up and describe by experiment where their heads and backs and limbs move most easily, and how far.

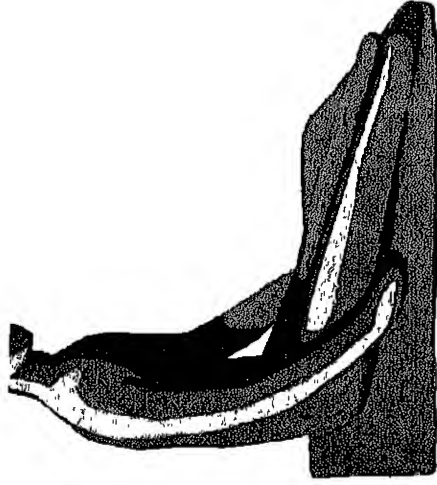
Taking the back and head first, they can discover the neck and shoulder movements, then the bend and twist possible to the waist. The



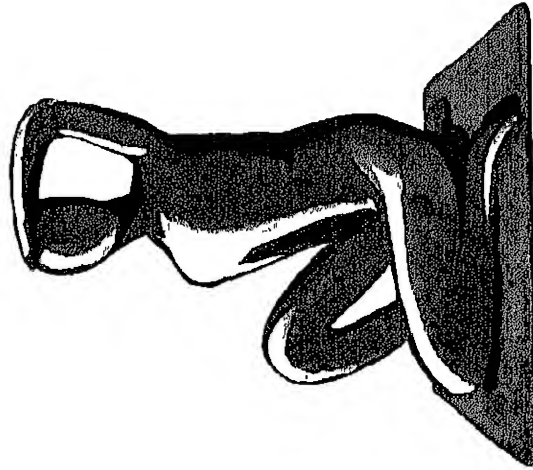
Stage 1



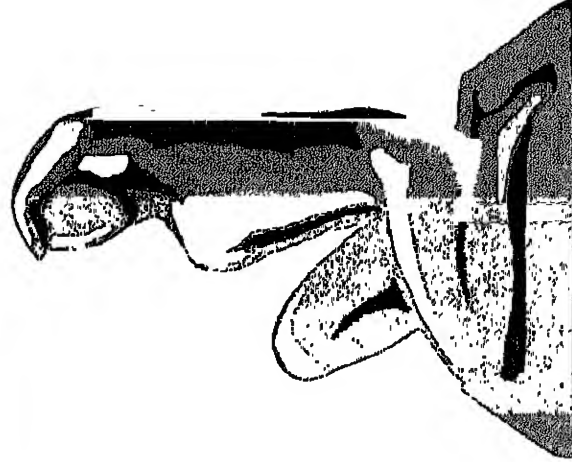
Stage 2



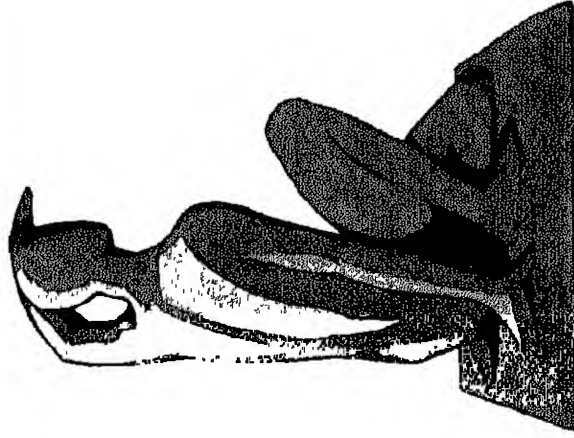
Stage 3



Stage 4



Stage 5—Left side



Stage 5—Right side

FIG. 16

Modelling of a Figure

lateral movements will be of great use to them in posing their clay figures, as these are particularly difficult to represent in drawing, and much more simple in modelling.

The length of the arm as compared with the body at elbow and finger tips can be felt and learnt on themselves, better than by looking at a diagram.

The leg movements will be easily felt by bending and crouching, kneeling and squatting. The arm with its range of many poses is more difficult to realize quickly, but again it is better to feel it for oneself than to see it on other people.

The lesson on proportion and construction can be repeated and added to as the children's skill grows. This first discussion should not be too long, as practice will make much clear to the class that was not easy to understand in words.

Modelling the First Figure

We will suppose that a subject has been chosen—a sitting down or kneeling one is simpler to start with. Start by rolling a piece of clay into a cylindrical shape; then, with finger and thumb for tools, press the head and neck at the top of the column. Take great care not to sever the head from the neck in this process, as it will never again stay firmly on the shoulders, if once broken off.

Now from the shoulders shape the tops of the arms, and at the end of the trunk press out the tops of the thighs. We shall now have a torso and head ready for the limbs to be added. Do not forget that the head is an oval, with an added oval for the face, that the neck is higher at the back, and lower down in front in consequence.

With the torso and head shaped to our satisfaction the class now sits this completed shape on the clay slab made to receive it. Arms and legs can be made by rolling cylinders of clay of suitable length and thickness, and attaching these securely to the stumps left at shoulders and thighs.

The little figure is now ready to be posed in the position already agreed upon. The children will take this pose for themselves, feeling just

where the balance comes, and where the joints are bent.

Choose a pose which can safely support itself, a great range of good positions is open for use. When the model is bent and twisted into the correct attitude, it will be found that the joints need better modelling, that the feet and hands could be put in, without any detail, to

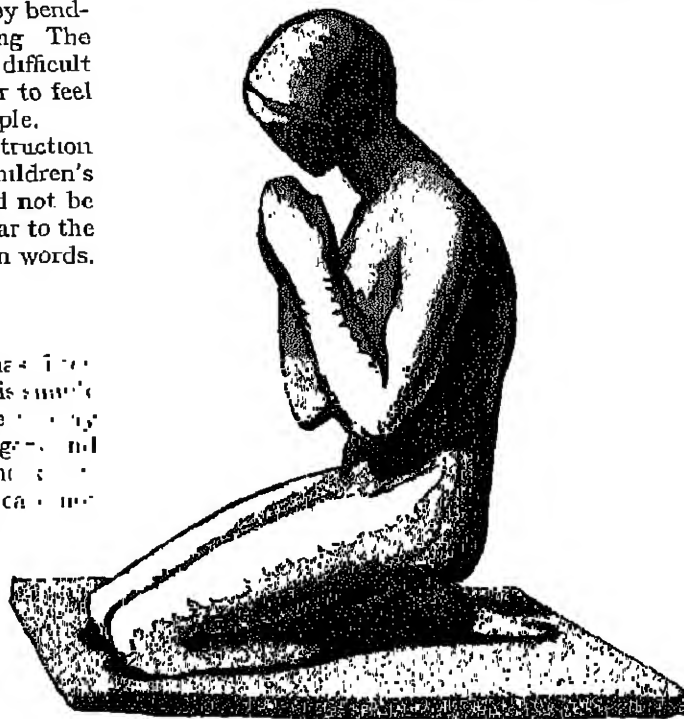
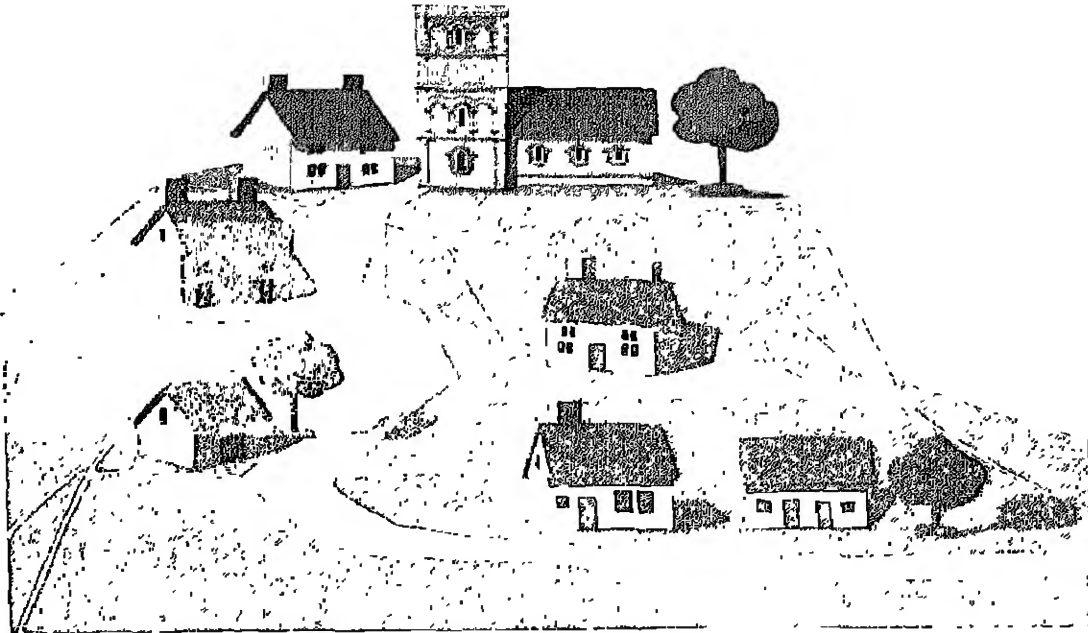


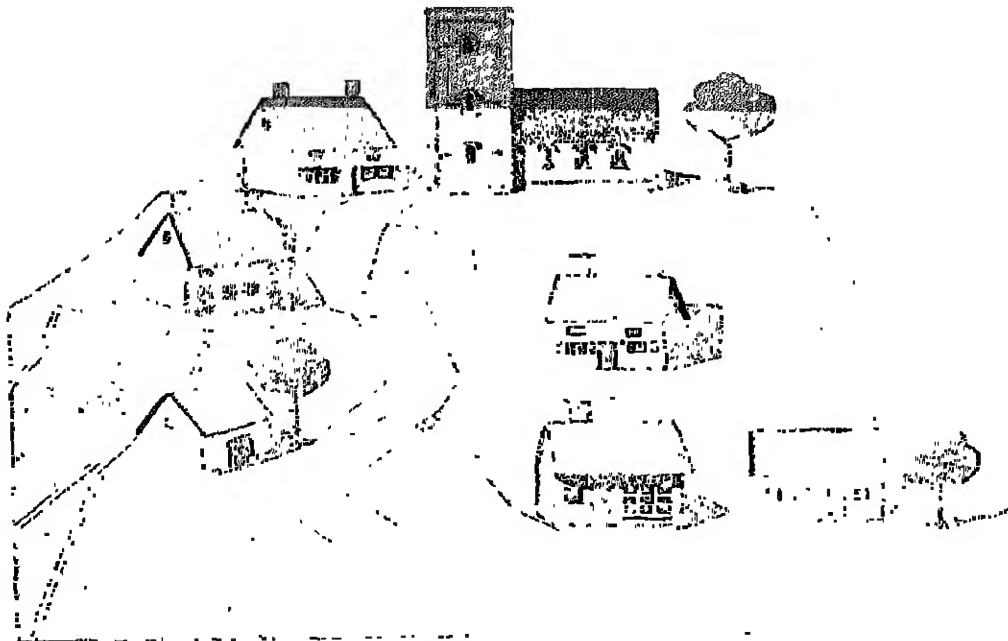
FIG. 17
A Simple Pose

help the pose, and probably the neck needs added clay to strengthen it. There cannot be much teaching in a first lesson on figure work other than the teaching of movement and balance. Later on there is much to add to this scaffolding. The figure must be turned about and seen from every point of view, so that it looks right and balanced.

During the early stages of figure work do not allow any detail of hair, noses, or even fingers and toes. The hands can be modelled like a baby's glove with thumb only separate, and



A NORTH COUNTRY VILLAGE
(Painted Clay)



A SOUTH COUNTRY VILLAGE
(Painted Clay)
MODELLING PLATE

the feet with only the big toe detached from the rest of the toes. The wrists and ankles can be made, as they help so much by their action

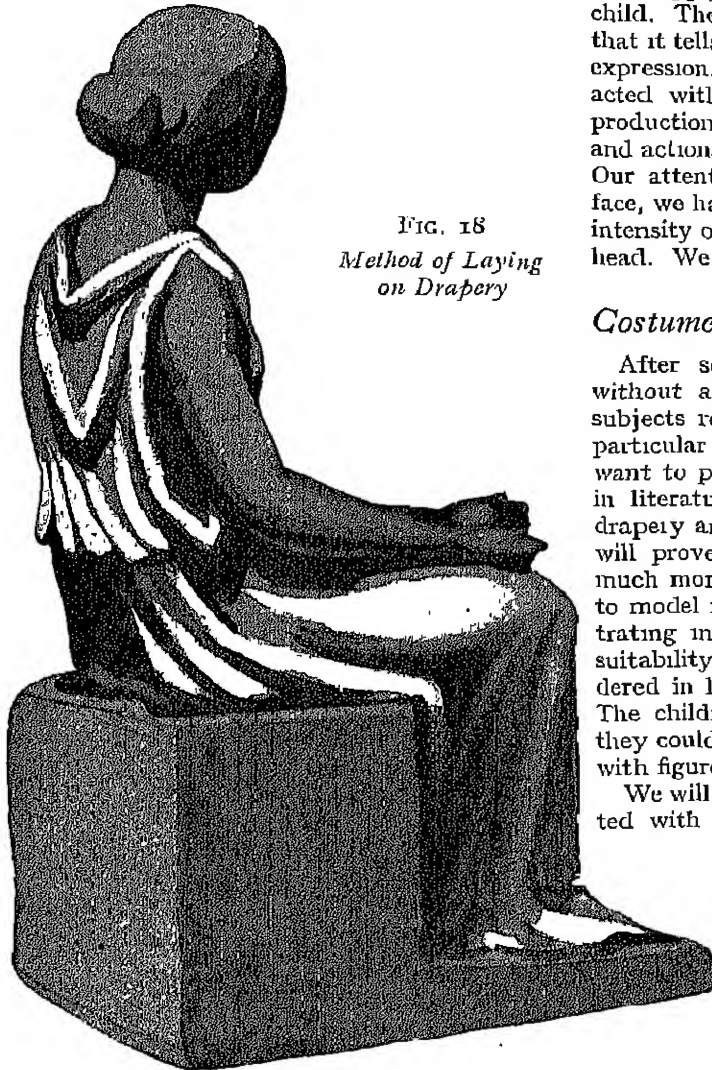


FIG. 18
*Method of Laying
on Drapery*

to express the pose. Nothing looks worse on a model than detail which is out of scale or too finished for the rest of the work; the figure should be complete as far as it goes from the start.

8—(E 3665)

In later lessons we can allow some shape to be suggested for the hair, but features on the face are not allowed in the small scale possible to our supply of clay and available space per child. The pose of the figure must be so clear that it tells the story without the need for facial expression. Those who have seen a Greek play acted with masked faces, as in the original productions, will recall how vividly the poses and actions of the actors convey their emotions. Our attention is not distracted from figure to face, we have time to marvel at the beauty and intensity of expression possible to the body and head. We are seeing sculpturesquely.

Costume

After several figures have been modelled without any mention of clothing them, just subjects representing emotions or actions, not particular characters, the children will begin to want to picture for themselves some character in literature or history, and the difficulty of drapery and costume will confront them. This will prove a very big problem—and involves much more than the necessity of learning how to model folds. How far are we to go in illustrating in clay? The class must discuss the suitability of subjects, some being better rendered in line or in colour than in form alone. The children have left behind the time when they could be allowed to illustrate their stories with figures complete with hats and umbrellas.

We will suppose that they are by now acquainted with good photographs of sculpture and work in the local museum and on buildings in the neighbourhood. The teacher can remind them of the conventional way in which clothing was treated—always to help the design, and express the action or help the mass.

With their understanding and appreciation newly awakened, the children will adjust their imagination to fit the needs of the material, they will understand that a crusader on his tomb is more suitable to sculpture than Charles II in his glory sitting in a Stuart arm-chair.

We need not rule out the possibility of drapery



FIG. 20

Tanagra Figure Drapery Composition

FIG. 19

*Indian Buddha
(Notice Treatment of Drapery)*

Reproductions by Courtesy of The British Museum

or clothing in modelling for young children. It should be possible to teach the simple beginnings satisfactorily, taking drapery first because the folds can be few and simple.

Drapery

The teacher can explain to the class the difference between a draped figure and a clothed one, clothing being material cut out to fit the body and made to the shape of some part of it, and drapery being just a length of material used to wrap round the body by way of covering.

Practical Demonstration

There should be either a lay figure or a clay model on which to drape the material to demonstrate to the class. Choose a soft but not too thin material, and let it fall in a very simple way, emphasizing the action of the figure it drapes. It is a good plan to damp the material before using it, and to have torn edges rather than a hem. This damp material will cling to the rounded parts of the figure and lie in folds in the hollows. The projecting parts of the figure will be the starting points for the groups of folds. The class, having made their lay figures in this or a previous lesson, can now apply the folds in strips of clay laid on and carefully drawn to hang from the points of support. Do

not let the class press thin clay strips into the figure or add the planes between the folds until the folds compose well with the figure underneath. These strips can be put on wetter than the clay of the figure; they will not be so difficult to handle or replace if they are not just the same dampness as the rest of the clay.

Care must be taken to see that the folds the children have modelled do not hamper the action, or clog the pose, of the model.

Clothing

As for modelling clothing, take the simplest kind of garment first—a bathing costume or running shorts, and a suitable pose for some one dressed for sport.

There will be some indication of the sleeve ends and leg ends, and the belt at the waist will help to show the action, too. But round arm-pits and at the waist the small folds will cluster and show the direction of the action, the rest of the clothing fitting the body closely and showing no folds.

So we can come to modern dress, and see what the children can make of it; there is no reason why it should not be used in preference to a style long since disused. It may be that they will show us new ways, and make modern fashions sculpturesque, if we do not hamper them with too much advice.



THE desire to decorate (or illuminate) presupposes something—article, design, drawing, or what not—that lends itself to that treatment. The would-be child decorator, with a brush and pot of paint, finds more scope for his ambition in the plain wooden toy-engine, for example, than in the more highly finished and painted locomotive.

Hence, it would seem to be the most logical plan in dealing with the decoration (or illuminating) of lettering, to begin by supplying the young scribe with a plain and simple style of lettering. (The P.J.T. Writing Chart shows, in the descriptive matter, how plain script writing may lead up to the joined letters and lettering for older Juniors.)

And here, let it be emphasized, lurks a great danger. Writing (which is, after all, only a form of lettering) is meant to be read, and any form of decoration that tends to detract from the readableness of the script—in other words, decoration for the sake of decoration—should be rigidly discouraged. It is essential to keep well in mind, always, the basic form of the letter with its individual and time-honoured characteristics, and to decorate sparingly; and then there will be little tendency to fall into that fatal error of perpetrating fantastic lettering that approximates to a Chinese puzzle.

The following table provides a key to the scheme. Each of the vertical columns, I, II, III,

IV, and V, represents a year's work, the illustrations being denoted by arabic numerals.

I	1	II	6	III	11	IV	15	V	20
	2		7		12		16		21
	3		8				17		22
	4		9		13		18		23
	5		10		14		19		24

I

The scheme is introduced by teaching the basic forms of the capitals (Fig. 1). These should be taught in the order outlined below. The letters are based on those of the Roman alphabet, from which all modern lettering has developed. If half-inch squared paper is used



FIG. 1

for the child to work on, little difficulty should be encountered in arriving at the correct proportions. It is, however, not advisable to enforce the proportions too strictly as, in some cases, notably the H and N, the square proportion produces too wide a letter.

Once the alphabet has been mastered it should be turned to some practical use before the "small" or "lower case" letters are tackled. Short quotations such as are to be found in nursery rhymes may be used for this purpose. The initial letter can be two lines of capitals high, and the colouring of this letter with red paint or ink lends an additional interest, and is really the first step in illuminated lettering.

JACK · AND · JILL
WENT · UP · THE · HILL

FIG. 2

Fig. 2 shows an alphabet of "small" letters of good form, suitable for use with the capitals already taught. Here, again, it is best to proceed to teach the letters in the order outlined in Fig. 3. It is far less tedious than working stolidly through the alphabet from a to z, and the child soon realizes that, once he can make a stroke and a circle, he has learnt the greater part of the alphabet

l i j f r t o c e s
① d a q g } letters formed by
② b p } combining stroke and
circle. ① on LEFT
② on RIGHT
h n m u k v w x y z

FIG. 3

It is now possible to attempt quotations combining both capital and small letters. The initial letter is usually three writing lines high. Here,

Mary had a little lamb
Whose fleece was white as snow
And everywhere that Mary went
The lamb was sure to go.

FIG. 4

again, it is a good plan to make the large initial of some importance by using a colour or tint.

The small letters are sometimes fitted into the initial as in the examples given below. Care should be taken to keep the lines of lettering clear of the initial.

To separate two verses of poetry, or in paragraphing, recourse is often made to a line of simple ornament or border. This band should not be too heavy, but approximately of the same "weight" as the lettering. Such bands of ornament can be tinted with the same colour as used in the initial.

As I was going up Pippin - hill
Pippin - hill was dirty,
There I met a pretty miss
And she dropt me a curtsy

□ □ □ □ □ □ □

Little miss, pretty miss,
Blessings light upon you!
If I had half a crown a day
I'd spend it gladly on you.

— ○ — ○ — ○ —

□ □ □ □ □ □ □

FIG. 5

II

In capital letters, the introduction of thickened strokes (or double strokes) presents little difficulty, while adding a pleasing variety to the letters. Moreover, the thickened stroke gives scope for better colouring and even for decoration. The rule for thickened strokes is quite simple if it is remembered that, if the letter is drawn with an ordinary pen, the action of the

↓ down strokes ↑ up, & side strokes
are thick are thin
typical letters:

A becomes A M becomes M
* NB Make V first, then
add the side supports

T H N Z V W X
L F E K Y

FIG. 6

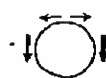
prongs of the pen is to open on the down stroke (giving a thickened line) and to close on an upward or side stroke. Only those letters formed of straight lines should be attempted at first.

Capitals so treated lend themselves to a variety of treatments. The thickened down stroke can be filled completely with colour, or only the middle may be coloured (as in the illustration). Again, a wavy line could be run down the middle of the double stroke, or the thickened stem may be coloured with alternating squares

Hark! hark! the dogs do bark,
 Beggars are coming to town
 Some in rags and some in jags
 And some in velvet gown.

FIG. 7

In dealing with the question of thickening curved letters, it must be pointed out that the stroke forming the letter gradually changes from a thin horizontal to a thick vertical and, consequently, the stroke expands and contracts. This graduation may present a little difficulty at first, but if it is remembered that the inside curve of a letter is even more important than the outside curve, and a little concentration is exercised on the lines forming the inside of a letter, this difficulty should not form a stumbling block. One apparent exception to the rule is seen in the letter "S," where maximum thickness is actually in the *centre* of the letter.

 graduated thickness from thin (horizontal) to thick (vertical) **Q**
UC:GDPR II
 NB **S** · not **S** weak
 FIG. 8

Easy quotations embodying the thickening of "curved" letters can be attempted next, with


Baby Baby Bunting
 Father's gone a hunting
 Mother's gone to buy a skin
 To wrap her Baby Bunting in


FIG. 9

little bands of ornament separating verses. Simple patterns readily suggest themselves, and children should be encouraged to use their own original attempts.

A further stage in the development of the initial is placing the letter in a simple shape—say an oblong or square. Such shapes can be used as a background, and, being restricted in size, can be decorated more elaborately and with greater care than if a larger surface had to be considered. In the older manuscripts, the scribes realized this, and used gold-leaf, which was raised in relief on a special preparation, to give the impression of solid gold.



FIG. 10

III

Up to this stage, the letters so drawn appear unfinished. Greater elegance can be given to the letters by adding small straight lines to the ends of certain limbs of the letters. These added lines are called "serifs"

E becomes **E** **M** becomes **M**
 FIG. 11

T H N Z U A W
V M X C G D I J
L F E K Y P B R S

FIG. 12

The pleasing effect of lettering well done should now be felt by the child. He should be able to appreciate the decorative power of lettering.

We have, in good lettering, as valuable a *motif*, for the purpose of filling spaces pleasingly

as the (more or less) regular repetition of ornamental shapes and patterns to be met with in the "all over" pattern or design. But we must begin to make our lettering *fill* spaces completely, not leaving white spaces at the ends of short lines

As a beginning, it is better to start with prose quotations, as the difficulty of avoiding spaces *at the end of lines is not met with to any great extent*. To this end, words may have to be contracted or expanded, which, as an exercise, adds not a little zest and excitement to this problem of exactly filling a line

Where a line cannot be filled without undue expansion (or contraction)—and this occurs most frequently in poetry—we must have resort to some simple ornament or running pattern of approximately the same "weight" or "colour" as the lettering forming the line. The ornament thus used should be such that a casual glance barely detects it.

Embodying these ideas, the next exercise shows a quotation in which the second and fourth lines, falling short of the maximum width, are made up with a simple leaf device. A comparison with Fig. 9 should emphasize the decorative effect of lettering in a given space

He that would thrive
Must rise at five
He that hath striven
Must rise at seven. ∞ ∞ ∞

FIG. 13

Where the opening words of a quotation suggest a title, a line of capitals, contrasting with the bulk of smaller writing, gives a pleasing and decorative effect. Such lines of capitals may be worked in the same colour as the smaller writing, or even coloured, as in the case of initial letters. The first letter could also be made into a larger initial letter.

OLD·KING·COLE
Was·a·merry·old·soul
And·a·merry·old·soul·was·he

FIG. 14

IV

At this stage of the subject, the broad pen might well be introduced. Unwieldy as this tool may appear to be at first, it is soon mastered. The ease with which contrasting thick and thin strokes are executed, the rapidity with which letters are constructed, together with the almost automatic way in which little ornaments and line finishings are produced, all tend to create a lasting fascination in this branch of the subject. The golden rule to remember is, "Let the pen do the work," by which is meant, let the pen make the thick strokes without any extra pressure from the hand of the craftsman. Give the child a broad pen, ink, and paper, and let him try out the new tool for himself. Once he has grasped the full significance of its use, he will realize that he has to hand a quick method with which he can write to form letters of thin and thick strokes, a method, moreover, that produces the correct strokes automatically.

The following alphabet can soon be mastered—always provided, of course, it is remembered to approximate to the proportions of the letters taught hitherto, and to discourage over-exaggeration of strokes and curves.

THNZUAVW
MXOQCGDIJ
LFEKYPBRS &

FIG. 15

Similarly, the lower case letters can be written with the broad pen, here again conforming with the letters taught in the earlier stages of the scheme.

lijfrt oces daqq
bphnmukvwxyz.

FIG. 16

Simple ornaments, such as shown below, are easily made with the broad pen. These ornaments are especially suitable for filling up lines of writing, separating verses of poetry, or for borders surrounding quotations.

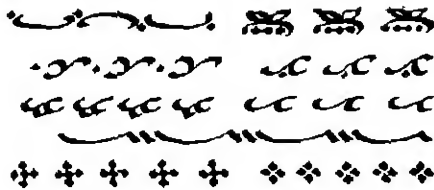


FIG. 17

Certain capitals are so formed that the lower ends of their stems can be elongated, or drawn out, without materially affecting their readability. In the example given below, the lower end of the initial letter has been drawn out to form a tail border to the verse of poetry. In old manuscripts, the drawn-out end sometimes was made to illuminate the margin.

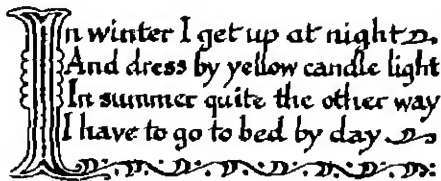


FIG. 18

Fig. 19 provides an example of a quotation with a "head" and "tail" band of ornament made with the broad pen. This type of ornament could very well be carried out in coloured ink.

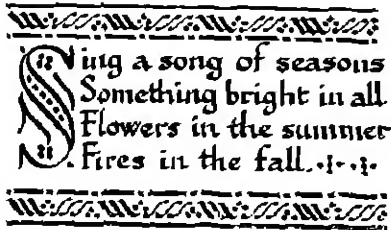


FIG. 19

V

The final stage in the development of the alphabet is the rounding off of the sharp angle between the stem and arm of the letter, and the "serif." This has the effect of adding great beauty to the letter, giving it a much softer and more refined appearance. Care must, however, be taken to avoid heaviness by cutting too suddenly across the angle, rather than *rounding off* the sharp angle. This alphabet is, of course, drawn and not made with the broad pen.



FIG. 20

The accompanying diagram shows the lower case alphabet similarly treated.

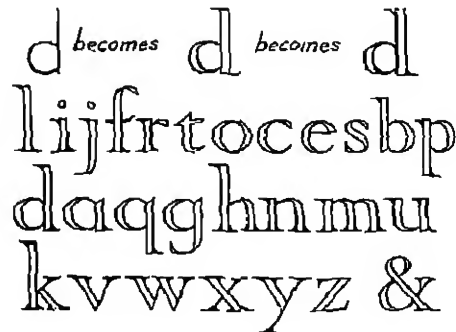


FIG. 21

In making out notices, the general planning of the lettering, or "lay-out," should receive careful attention. It is more than a question of writing out, for it involves designing or arranging with a definite object in view.

In the example chosen, the important fact to be brought out is the announcement of a "concert." This word, therefore, must stand

out clearly, and should be placed about one-third of the way down from the top of the notice

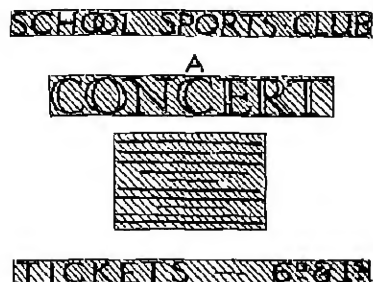


FIG. 22

The correct margins to a piece of writing should be carefully noted. In general, the side

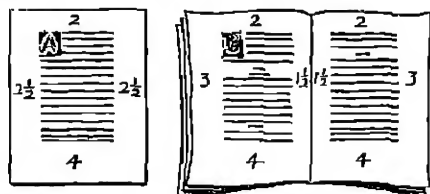


FIG. 23

margins should be greater than the top, and the bottom margin at least twice that of the top.

Two examples are given below of initial letters decorated (or illuminated) in a simple but effective way. Although more ornament has

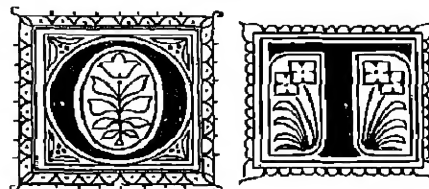
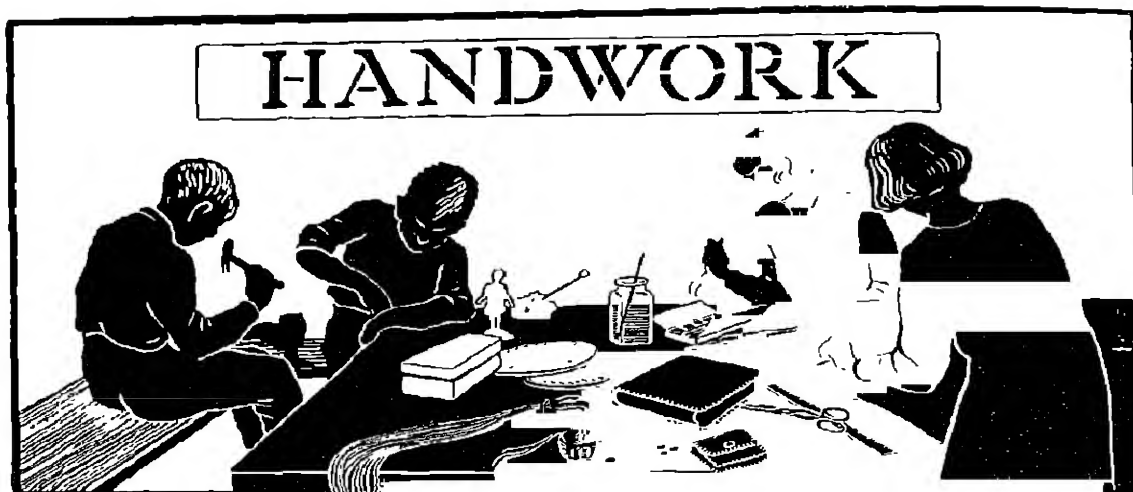


FIG. 24

been used than in any of the previous exercises, it should be noted that in no way has the simplicity of the letter been spoilt or marred. In each case, the letter stands out quite plainly and can be read easily.

When the beauty of good lettering and arrangement has been discovered through careful work, it is only natural that the desire to go further should find expression in attempting something a little more ornate. To foster this desire is the excuse for Fig. 24.

For, lo, the winter is past, the rain
is over and gone ; the flowers
appear on the earth ; the time of
the singing of birds is come and
the voice of the turtle is heard
in our land ; the fig tree put-
teth forth her green figs &
the vines with the tender
grape give a good
smell. Arise my
love, my fair
one & come
away



HANDWORK IN RELATION TO ART

VALUE OF HANDWORK AS A CULTURAL SUBJECT

"Creative and constructive art may be developed in many ways. . . . In general, however, there are two main lines of development; one, the use of graphic or plastic forms imitative of the visible appearance of life around the child . . . the other, more definitely constructive in character, supplying opportunities for using tools and handling materials, suggesting consideration of purpose and fitness as well as the representation of beautiful and interesting forms."—REPORT ON THE PRIMARY SCHOOL.

THE subject of Handwork has become so firmly established in the curricula of all types of Primary, Central, and Secondary Schools, and has reached such importance in schemes of education, that before discussing its value as a cultural subject it is best, perhaps, to view the general position it has gained amongst the subjects taught in a general educational scheme, and its educational value in that scheme.

The subject seems to have had its beginning as a development from two points, that of the drawing lessons on the one side, and that of the manual work on the other. The former consisted of exercises in copying, and the representation of objects both natural and artificial. Then was added instruction in simple abstract design, and the first attempts at creative effort were initiated. On the other side, the various forms of manual work, such as woodwork for boys and needlework for girls, were taught mainly as utilitarian subjects, quite distinct and in no way connected with the drawing lessons. In recent years has come the introduction of other forms of *handicraft*, of types suitable for decoration, and often of a type essentially decorative in itself.

In regard to the *drawing* side the feeling has grown that the instruction given in pattern design would be of far greater interest and value to the young pupil if his efforts at abstract design could be carried out as the actual decoration of some object in order that he could see for himself the ultimate end and use of his efforts. These developments have brought about an overlapping of aims in the two subjects, and created a relation between the two which even now seems to be but imperfectly comprehended. Type after type of handwork has been introduced, and in some cases the real educational value of handwork, and the true fundamental reasons for its introduction into the curriculum, have been lost sight of, in the desire to include "the latest" amongst the list of subjects taught.

Distinctly divergent views were taken by those teachers who favoured the "Art" side of the development, and those who favoured the "Handwork" or technical training side. But in spite of much confusion of thought, and divergence of aim, the subject has firmly established its educational value, and has now developed to a point when it seems possible to assign

to it its true place in a modern educational scheme, and to define its functions more clearly.

The subject of this section is to examine the value of handwork as a cultural subject, and it is, perhaps, this side of its educational value that has received the least amount of attention heretofore. Education may be said to be the training and developing of the minds of the young in such a way that they may become intelligent and active citizens, having a keen interest and deep knowledge of the world and environment into which they are born, a power of discrimination between good and bad in all things, and an intelligent understanding of all with which they are brought into contact. This is an aim kept in view in much of the instruction given in our schools, in Nature study, physical geography, appreciation of music, poetry, and literature generally. It seems that the handwork lessons, especially when the crafts taught have a distinctly decorative leaning, might be made a means of making our young pupils acquainted with the works of mankind in the construction and decoration of those man-made objects which surround us, and enter so entirely into our everyday life. We may thus develop a better and more sympathetic understanding, not only of those around us, but of those peoples who have gone before, and who have left behind them, in their constructive and decorative works, a record of their thoughts, ideas, and inspirations more eloquent and illuminating than written descriptions.

The appreciation of art in our education has been largely directed toward the pictorial arts and sculpture, but surely, of all the arts, that which most nearly approaches and influences the entire people from the highest to the lowest, in every sphere of life, is the art of construction and decoration of everyday articles, the industrial arts, the art of making those things which surround us in our everyday life. This most intimate association with the things we see and use every day of our lives should be made the means of developing that culture of mind which distinguishes the truly educated man or woman. The very intimacy of our association with made things, in the street and in our homes, makes a study of the decorative and constructive arts pre-eminently the finest of the cultural subjects.

Handwork in schools in the lower classes leads to definite crafts in the upper, and the whole tuition should be co-ordinated in such a way that the lower-form subjects form a basis for the later craftwork for instance, folding paper and cardboard modelling may be the basis for later bookbinding. The crafts suitable for inclusion in a scheme of handwork are numerous, but too great a number of unrelated crafts in one scheme leads to imperfect knowledge of any, and a scheme which is progressive throughout the school will be most conducive to achieving the truest aims of the teaching of handwork.

Throughout the teaching the creative faculty should be encouraged, trained, and developed. Much woodwork and needlework is of a purely technical nature and of a utilitarian character, but where those subjects reach the point of "creative work" the aims of the teacher should be toward the same end as those of the teacher of the so called "art crafts." The development of this creative faculty through young children's delight in making things must be guided with more and more care as they advance toward taking up the definite crafts. Neatness and accuracy in the early exercises of paper folding and cardboard modelling must be supplemented by greater thought for suitability of purpose, suitability for materials used, and the principles of art applied to the making of things.

Thus the pupil may be brought to discriminate between good and bad from many points of view. Good workmanship and construction are essential. A piece of work slovenly executed is a setback in the pupil's development. The teacher should aim at being thoroughly acquainted with the technical methods and requirements of the handwork he teaches, for a badly constructed object is not worthy of further consideration. A well constructed object is a work of art in itself, though consideration for other qualities may make it better still.

Train the young pupil to appreciate good work. Pleasing proportions, both in the whole object and in its parts, should be explained and a sense of good proportion developed. Decoration, if any, should not be allowed to be indiscriminately applied. Its purpose, suitability, and position should be thoroughly understood, mere decoration for decoration's sake should be

discounted: indeed, the teacher, throughout the whole time, should not lose sight of the fact that, as in all teaching, he is training a young mind, and that he must lead that mind along the paths to the end he has in view. The power to discriminate good workmanship from bad, and good design from bad, must be taught side by side with the technicalities of the craft, if the cultural value of handwork is to be appreciated.

In crafts of a pictorial nature, such as linocuts, which are of the nature of decoration in themselves and not decorated objects, due regard should be paid to the ultimate use to which they will be put. Furthermore, the cultural value of handwork may be enhanced by bringing to the pupils' notice whenever possible, specimens of good examples of the crafts at which they are working, and by drawing their attention to the finer points of those specimens. One of the aims of teaching handwork should be the cultivation of an appreciation of really good work from both a technical and a decorative point of view, and the development of interest in the aesthetic side of those things we see and use in everyday life. We thus make life fuller, and create an interest in and understanding of things around us that react on all our judgments, giving that power of deriving pleasure from those things which have real worth, which distinguishes the cultured mind.

The study of handwork leading to crafts and the creative production of things leads again to the study of the decorative and constructive art throughout the ages, and so to a more intimate and sympathetic knowledge of mankind. The teacher must always realize that he is in many cases teaching only the beginnings of his subjects. If he can implant an interest for these things in his pupils, and encourage a desire for further knowledge when they have left him, he will have done much toward the attainment of the cultural aims of handwork.

It seems that a certain amount of co-operation with such a subject as history will give an opportunity for the introduction of the study of crafts at different periods. Occasional visits to museums, where possible, illustrations of objects of historical interest, short talks on matters of moment, such as exhibitions of decorative art when they are held, and an

encouragement of the pupils to discuss the construction and decoration of any objects they may have noticed will do much to develop an interest in these matters, and augment to a great degree the ordinary handwork instruction.

Stress has necessarily been laid on this aspect of the teaching of handwork as a cultural subject in order to keep within the limits of the title of the section. It is such aspects of the subject that are easily lost sight of in the teaching of this subject. Much has been said about vocational teaching, but the subjects taught in our schools must in the main be educational in aim, except for a certain amount of vocational instruction in industrial districts where it is reasonable to suppose that a large percentage of pupils will go into a particular trade or occupation. But even in cases of this kind it is surely true that this educational and cultural side of education cannot be neglected, for in it lies that which helps to make life full of interest, which gives pleasure of the best kind to an active mind, and so produces a more intelligent and happy people.

In considering the cultural side of handwork, and indeed in considering it from all points of view as an educational subject, there seems to emerge the fact that the handwork teacher requires a special training, which at present neither the purely art teacher nor the technical teacher possesses. To be successful and to teach handwork so as to derive from it the greatest educational value, the handwork teacher must of necessity be an expert in all the technical processes of his craft, and must have a thorough knowledge of design and its principles as applied to his particular craft or crafts, and of the more important historical styles. He must also have the ability to impart that knowledge in such a way that his pupils will develop a creative talent for making things, a desire to make and do all things well, and to produce their finest work, whether in making or in decorating, together with a power of discriminating good from bad, an appreciation of the good work of others, and some knowledge of the growth and development of their crafts. The practice of handwork teacher and art teacher working together in the teaching of designing, making, and decorating of objects was seldom successful, for the

former teacher was chiefly concerned with technical processes, while the latter, whose interests lay mainly on the artistic side of the subject, often produced unworkable designs.

Now that handwork has so closely allied itself with art as to become one of the most important of the cultural subjects, and now that art teaching in our Primary, Central, and Secondary Schools has developed from the stage of copying

and representative rendering of objects, to work of a more creative character, the two subjects seem to have merged into one common educational aim, and the time has arrived when they may be amalgamated and brought into a single subject, under the direction of a single teacher, specially trained to understand the aims of his subject from all points of view, not the least of which is handwork as a cultural subject.

THE PRINCIPLES OF ART APPLIED TO CONSTRUCTION

In the consideration of handwork as a cultural subject in another section, its development from its beginnings in the early drawing lessons and in the manual work of our schools was briefly traced up to the important position it has now attained.

The need for thoroughly reviewing the art and handwork instruction, and for bringing the objects and aims of the two subjects into closer relationship with each other, is becoming more and more obvious. Approaching from different points of view, these aims are now leading to a common goal in certain respects. This common goal is bringing clearly to view the necessity of co-ordinating and merging into one whole the two subjects whose educational functions and aims shall be clearly defined and thoroughly understood.

An examination of how the principles of art may be brought to bear on the constructional side of handwork may show how the relation of the instruction given under the name of handwork and that given under the name of drawing or art may be strengthened so that the teaching of each subject may best be directed toward the attainment of one common aim.

At its present stage of development, handwork has become, at any rate in the upper classes of the schools, a cultural subject giving opportunities beyond the training of the manipulative faculties and the execution of technical processes, such as making certain woodwork joints, or seaming. By the introduction of crafts such as the stencil, and the lino cut, pottery, and bookbinding, the opportunity arises for training and developing the sense of appreciation of those principles of art which govern the production of all good craftwork.

Design in Construction

In considering the principles of art as applied to handwork, it is perhaps well to remember at the beginning that decoration is not necessarily the only form of design. Any object made must be designed (apart from any consideration of decoration); whether well or badly, will be according to the thought that is put into its conception before actually commencing the construction. An object should be planned in such a way that it is perfectly suited for the purpose for which it is made. This quality or principle of suitability, or fitness for purpose, for materials, for tools, in fact suitability from all points of view, is perhaps the most important of all the principles of art, as it embraces so many of the other so-called principles of art. How often one sees this principle violated in the production of "fancy goods," which are produced with a certain superficial attractiveness but which are worse than useless for any practical purpose.

A folding leather blotter should be constructed of such a shape that the ordinary sizes of blotting paper may be inserted without cutting or manipulation of any kind. Thought and care should be given to the placing of handles of any kind on objects, these should be designed and placed in such a way that they carry out their own purpose in the best possible manner without interfering with the use of the object as a whole.

A good and clear understanding of the principle of suitability for use influencing construction and shape may be gained by a study of the most common objects and utensils of everyday use. Such objects whose shapes have evolved by the influence of this very principle may be seen in the ordinary galvanized bucket, with its

drop handle, the watering can, cups and saucers of ordinary shape, tumblers, knives, forks, and spoons, and boxes of all kinds having a definite use. The same principle is seen in the shapes of the large-bodied bottles with very small necks used for containing acids, which can be seen in all chemistry laboratories. Lessons of real educational value and the training of mental alertness can be given to our pupils by the consideration of a few very common utensils.

Importance of Form and Proportion

But even when keeping to this principle of the design of shapes of objects from the point of view of their use, there is large scope for the

designer's point of view, teaching them to give careful and earnest consideration to all the things they do, and to recognize the evidences of careful thought and planning in the work of others when they see it.

Consideration for suitability for materials and tools is closely allied to the technical side of the production of an article, and it is in the introduction of ornament on an object rather than in its construction that this law or principle is frequently violated.

Design and Ornamentation

Consideration has been given so far only to the construction and proportion of objects from

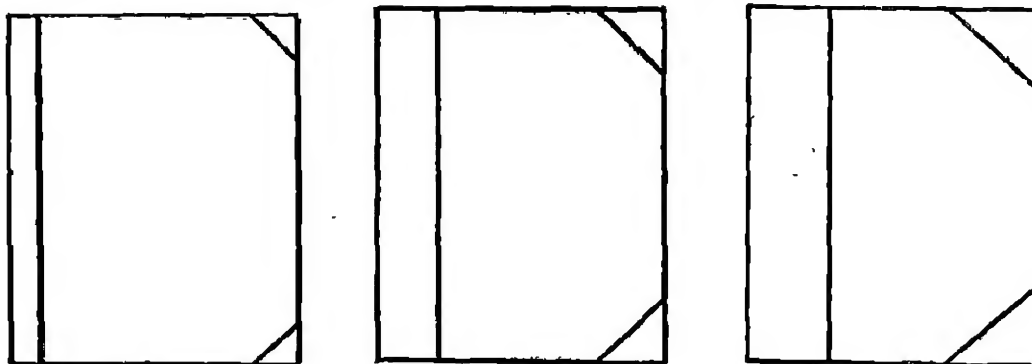


FIG. 1

Effects of Proportions in Binding

consideration of shape purely from the view of pleasing proportion and ratio of masses. Thus the rectangle which is nearly a square, and the oval which is nearly a circle, are forms which cause confusion and a feeling of lack of definiteness in expression. The rectangle formed of two squares or a solid formed of two cubes does not seem to please the eye in the same way as forms definitely square or oblong.

A book bound in half leather or cloth may produce quite different effects according to the proportion of leather to cloth, as will be seen in the accompanying sketches.

Thought and consideration for these matters of proportion in the construction of objects and their parts is of high educational value, for it raises the instruction above the purely technical aspect, and gives the pupils an insight into the

the standpoint of the application of the principles of art to such construction; but the ornamenting of objects with what are called "designs" leads to that side of handwork where there is infinite scope for interesting study.

Crafts taught in schools at present may be classified into those which need not be decorated, or which may have ornament applied to them, or developed during the process of production, such as basketry and bookbinding, and those crafts of the type of stencilling, lino printing, and embroidery which are decorative and ornamental in their nature, and are often subsidiary crafts applied to work of another kind.

Of the former type of craft, ornament may or may not be applied, but it should be borne in mind that an object badly constructed is not worth ornamenting, and that an object well

made is a work of art in itself and may easily be marred by the application of bad ornament, or ornament applied in a bad way, without due consideration being given to the form and construction of the object to which it is applied. The reason for decorating an object should be to make a good object better. Decoration, when used, should be kept quite subservient to the object decorated, fitting it and accentuating its constructive qualities, in no way interfering with its use or hiding its form, but rather aiding its appearance by definitely marking its con-

struction. Basketry presents great scope and opportunity in this direction. The banding of different colours and the delightful patterns which result from the different methods of interlacing give the pupil many opportunities of exercising forethought and ingenuity while keeping within the bounds of good construction. Raffia work again presents an opportunity of good sound instruction in the application of decoration on constructional lines, to a teacher who has a clear idea of the function of ornament.

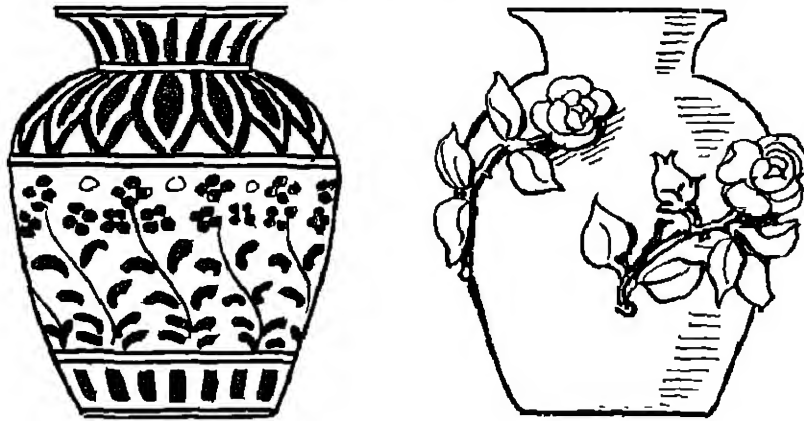


FIG. 2

Decoration : Emphasizing and Detracting from Beauty of Form

structive parts, and yet so falling into the general scheme of shape and construction that one feels constrained to say "What a beautiful object!" rather than "What beautiful decoration!" The attempts which one sees at realistic floral and fruit representations, and even landscapes, carried out in leather, copper, or raffia, without any consideration of the relation of the decoration to the construction of the object ornamented, indeed without any consideration of its fitness or suitability from any point of view (a bag or some such article being used merely as a vehicle for carrying a pictorial representation of fruit or flowers) reveal misunderstanding of the true principles of decoration.

Design Innate in the Construction

Much ornament is constructive in its nature, and is the true outcome of the materials and

tools used, and the methods employed in construction. Basketry presents great scope and opportunity in this direction. The banding of different colours and the delightful patterns which result from the different methods of interlacing give the pupil many opportunities of exercising forethought and ingenuity while keeping within the bounds of good construction. Raffia work again presents an opportunity of good sound instruction in the application of decoration on constructional lines, to a teacher who has a clear idea of the function of ornament.

Principle of Designing

As in the planning and construction of an object suitability from every point of view is the great principle that should guide the designer, so in designing decoration for an article suitability for its purpose as a decorating feature should be the guiding principle. The true function of ornament is to enhance the beauty of the article ornamented, and in considering the application of the principles of art to construction one sees where much of the so-called decoration

loses any beautifying effect, because it is applied without any consideration of its relation to the construction of the object. Qualities of construction and shape may be enhanced and emphasized by the ornament used, or they may be lost or obscured. In the two sketches shown are given simple examples of how shape may be emphasized in the one case by banding at the neck, shoulders, and base of a simple vase shape, and in the other case how the decoration employed obscures any beauty of form which the original shape may have possessed.

Thus bearing in mind this principle of art that decoration should be true to its function of accentuating the constructional qualities of the object decorated, objects which are essentially of a flat nature will certainly appear better by being decorated with a pattern which emphasizes the flatness of the parts decorated. The planning of simple diaper patterns, fitted to given and definite flat shapes, gives exercises in forethought and ingenuity in the planning and grouping of simple units which are within the capacity of quite young children.

True Function of Decoration

Decoration, then, will learn from the principles of art which have been observed in all the finest periods of decorative art to be subservient to the article and its use. It will serve to preserve and bring into greater relief those qualities of construction which the article possesses, emphasizing its flatness or curvature by being most suitable for the position it occupies, but it will also conform in suitability to the material in which it is worked and the tools with which it is produced, and in this respect we see again the relation of the principles of decoration to construction. Each craft has its characteristics, those qualities which give it its individuality and make it different from the other crafts.

These characteristics are the outcome of due regard being paid to the limitations of the material used and of the tools used, and the designer of decoration should bear in mind these limitations. Thus a design for embroidery will differ from one to be carried out in basketry or carved wood. Embroidery and needlework have

in former days given scope for many ingenious, realistic, and pictorial effects which, although wonderfully skilful in execution, so lost the characteristics of the craft employed as to produce, when viewed at a short distance, the effect of paintings. We are more and more growing to appreciate the influence that material, tools, and construction have over design, and to value each of the many handicrafts for those individual characteristics it has to offer us, which can be found only in that particular craft.

Working within these principles there is wonderful scope for real original work, and individual style of work, and the teacher who has laid the foundation of a real appreciation of good decorative art in his pupils has not only trained them in manipulative skill, but has done much to raise the standard of industrial art, especially in the production of those things that come into the use of all classes of people. He has given to his pupils that capability of judgment in all things, from the standpoint of suitability in every way, that cannot fail to have a good effect on the development of character.

Art and Handwork

The relation of handwork to art has necessarily in so short an article only been touched on in the very broadest manner, but it has been shown, it is hoped, that the handwork teacher must be artist as well as craftsman, to be able to extract the greatest possible educational value from his subject. The study of line and form, of tone value, and of colour have not been touched on as they do not bear so directly on construction, but such subjects are intimately bound up in decoration; it is in the art or drawing lessons that their study will provide the pupil with a fund of knowledge that will be of infinite use to him in his handwork. Thus the solution of the problem of placing the instruction of handwork and art on a sound basis, working together toward a common cultural end, seems to lie in the handwork teacher's having artistic knowledge of his craft as well as of its technical requirements, so that he is capable of obtaining the full educational value which the subject of handwork certainly possesses.

COMMUNAL WORK

IT is freely admitted that the modern "active" methods of Infants' School education are in the main sound, as they provide for the growing child physical, mental, and aesthetic outlet. All too soon, however, "shades of the prison house begin to close" as the hard grind of mastering the various intricacies of the three R's in preparation for Secondary School life overshadows the child. Harassed teachers of large classes find that it takes real heroism and unflagging enthusiasm to incorporate in the weekly work some real activities. The improvement in the curriculum of the new Secondary Schools should react favourably on the Junior departments, since it is reasonable to suppose that an approach to Secondary School crafts should be made in the years between the time of leaving the Infants' School and the age of 11.

Let us forget for a moment the child-as-he-will-be and study the child as he is at the age of 7 or 8. He will be found to be a "stirring" young person just beginning to realize his place in the family group and in the larger family of the classroom and playground. He has mastered the elements of speech, and can make known his thoughts and feelings by the spoken word. He has pride in, and some control over, his physical powers, and an intense interest in the happenings in his immediate environment. He may also have a strongly developed vein of fancy, or the power of dramatic (miming) expression; and thanks to his years in the Infants' School he may have developed the power of expression and representation with crayon, pencil, or plastics. If such a child is to develop his talents harmoniously so that his personality is enriched to its best possible attainment, it is obvious that his education must be truly liberal. He must experiment with all kinds of materials, learn the laws of design and colour, gain understanding of the complicated machinery of daily life. Not least he must learn to co-operate with his fellows, must find what special contribution he, as an individual, can make to some project undertaken by a group of his contemporaries.

Communal work, or the development of some

special project, forms, therefore, a valuable part of the practical training of the Junior child. In a certain sense all his work is communal, but exercises in simple bookbinding, in poster-making, or in pottery are an end in themselves. Communal work should centre round some big topic, and should leave a definite impression and impart a definite culture to all the little people who have taken part in the project, however small their parts may have been.

Suggested Topics

The most obviously interesting topics for community effort are—

1. *The Seasons and Festivals* of the year.
2. *Home Life*—in our native land, and later in other countries.
3. *The Public Services*—postmen, policemen, etc.
4. *Health and Good Habits*.

In making a study of these subjects many craft materials will be used and much useful knowledge gained of craft methods, and of the laws of design and colour. The following suggestions are necessarily brief, but give an outline of how such central ideas may be used for community effort in a class. The class should be divided into groups, each group having a leader, chosen for qualities of personal dominance, of talent, or of skill, as the case may be. A class of forty children would comprise five groups of eight. General discussion of the project should precede action. "Jobs" may be given to the various groups, and necessary instruction imparted to the class as a whole. Later the teacher might find time during a lesson to see each of the group leaders and advise or help them in their particular tasks. Work of this kind touches all the other subjects of the school curriculum, as will be seen.

1. The Seasons

1. Autumn.

- (a) Community frieze of flowers and fruits.
- (b) Posters done by different groups of

succession, e.g. harvesting, autumn leaves, Hallow-e'en, 5th November, Armistice Day.

(c) The harvest of the fields. An exhibition of fruits and vegetables, afterwards used as drawing or modelling exercises.

(d) Clothing in autumn. Study of wool and woollen clothing—knitting (see Fig 1).

2. *Winter.*

(a) Christmas wall frieze.

(b) Christmas cards and calendars.

(c) Easter gifts to hospital. Scrap books.

(d) Decorations, etc., for May Day Festival.

4. *Summer.*

(a) Wall frieze of summer flowers, or the seaside (see Fig. 2).

(b) Group posters showing outdoor sports, picnics, etc.

(c) Collection of tree-twigs, flowers, shells, etc., as possible, these being used for drawing and modelling.

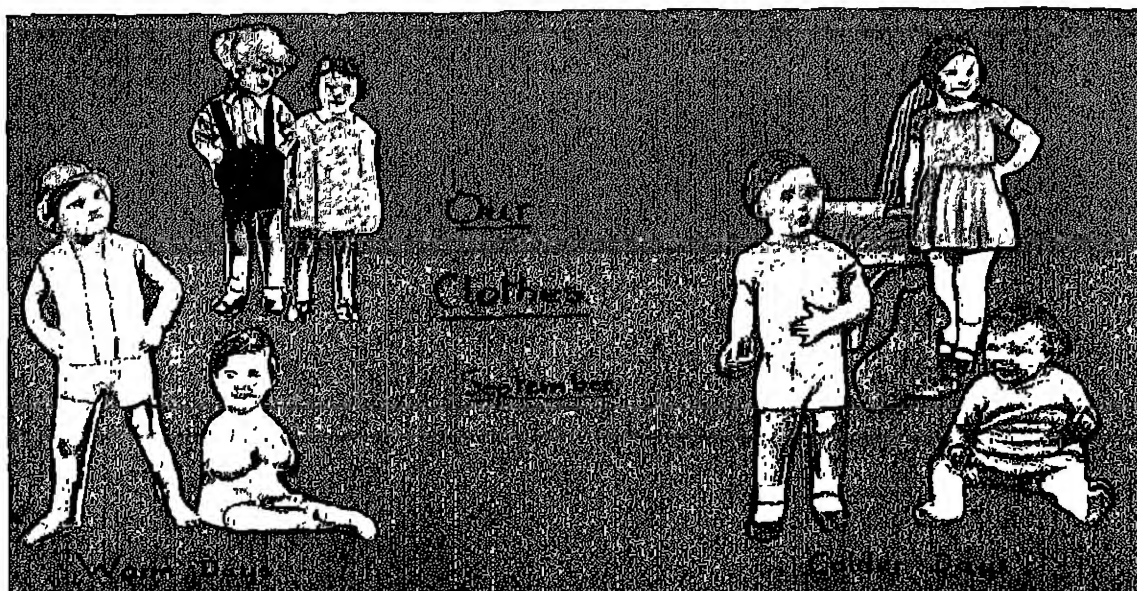


FIG. 1

Clothing for September

(c) The making of Christmas gifts. (The groups would re-form for this under type-of-work headings, so that materials could be conserved in one part of the room.)

(d) Winter: climatic conditions. Experiments in study of snow and ice.

3. *Spring*

(a) Wall frieze of spring flowers.

(b) Posters in season—Young animals, Birds and nest, Easter poster, St. George's Day (23rd April) poster.

(d) Warm-weather clothing: Cotton and how it is manufactured; prints and patterned materials.

A closer examination of these suggestions will reveal the fact that the activities come under one or two craft groups only, and therefore do not provide a difficult problem in materials and storage, or in allocation of work in the classroom.

Poster Work.

As this forms a main part of the project, it might, where the allocation of time for

Handwork is small, be done in the drawing period. Wall friezes, if there is blackboard on the wall surface, could be built up by individual pastel (chalk) studies. Failing this a long strip of brown or dark mounting paper, 1 ft. deep, should be fixed to the wall and used as a background.

Materials for group posters would be (a) cut-out pictures from magazines; (b) cut-outs in coloured gummed paper; (c) crayons, and, in later years, poster colours

Christmas Gifts

Gifts for Christmas would depend on the skill of the child and on his craft experience. Useful classroom groupings might be—

- (a) A knitting group.
- (b) Group painting tins and wooden boxes.
- (c) Group covering boxes with fancy papers, making blotters, etc
- (d) Pottery, basketry, or weaving group, according to the previous practice of the children.



FIG. 2

The Seaside : Cut-outs from Picture Papers

Many teachers wisely decide to study the elementary forms of one craft each year. Group work would add the necessary variety and animation to this study. It might be suggested that *the approach to Bookbinding* be taken in the same year as the Seasonal Topic is followed in communal work.

Clothing Projects

A second topic within the scope of these exercises is the study of winter and summer clothing. Such knowledge as may be gained will form a valuable background for weaving. Patterns of tweeds and woollen cloths should be collected, and the weaves discovered. Experiments in the spinning of raw wool (using primitive spindle) should be made. Similarly the many types of cotton and linen cloths could be assembled, their yarns discovered, and methods of printing and colouring studied.

2. Home Life

Our Homes. (a) Group posters of living-room, bedroom, etc. (see Figs. 3 and 4).

(b) Pottery. Utensils commonly in use. (See Pottery section for methods of making)

(c) Furniture. The table, the chair, the bed, the chest: these to be made from various scrap materials or in stiff paper. (If older children are following this topic they should make or collect pictures of typical English chairs, etc., of past times and contrast with modern furniture.)

(d) Interior Decoration. Colour schemes for various rooms having regard to (1) type of room, (2) exposure of room. These could be worked out on small models of room corners, or a doll's house might be made and furnished as a play project in an evening play-hour. (Fig 5.)

(e) Decorative accessories in the home: lamp-shade, mats, book-ends, etc., according to the age and craft experience of the children.

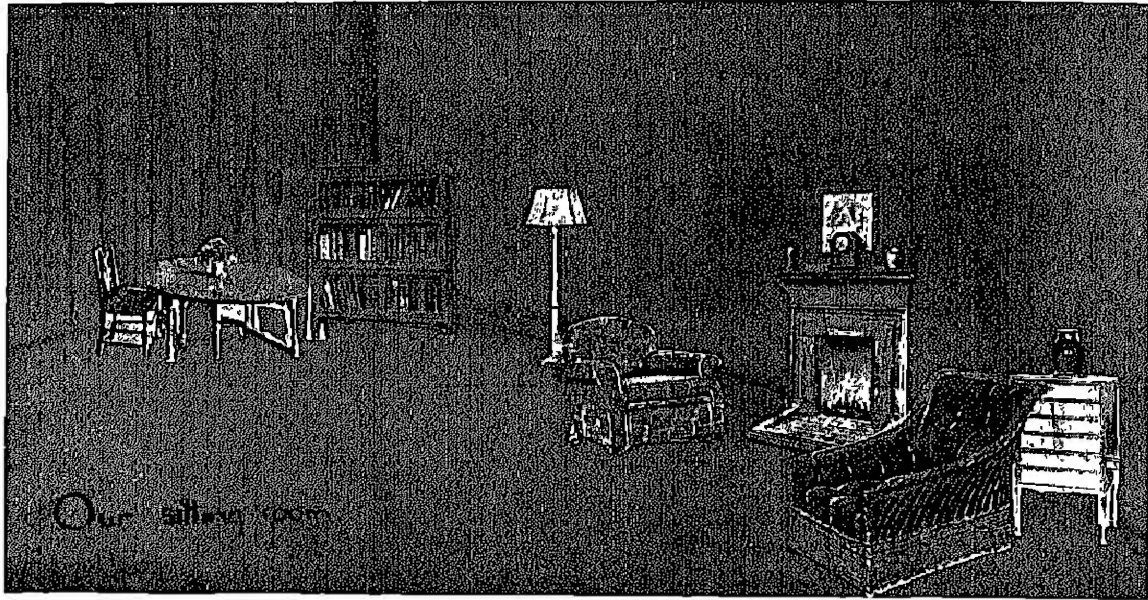


FIG 3

A Sitting-room : Cut-outs Assembled from Catalogues

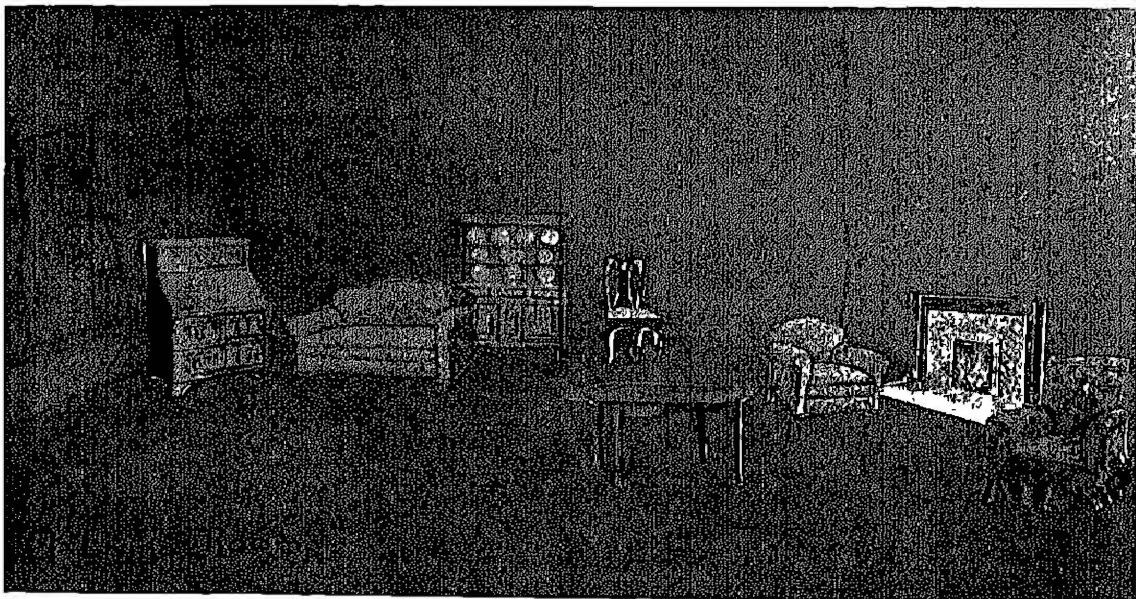


FIG. 4

A Living-room : Cut-outs Assembled from Catalogues

Homes of Other People

(a) Ancient dwellings—Sand-tray assemblages of lake-dwellings, etc. See PRACTICAL JUNIOR TEACHER, Volume III, History.

(b) Homes in relation to environment. Models

— CORNER OF ROOM —

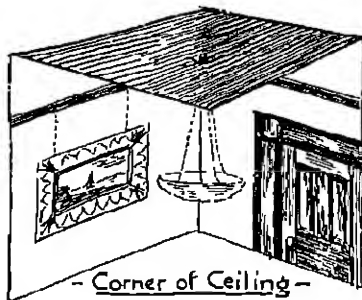
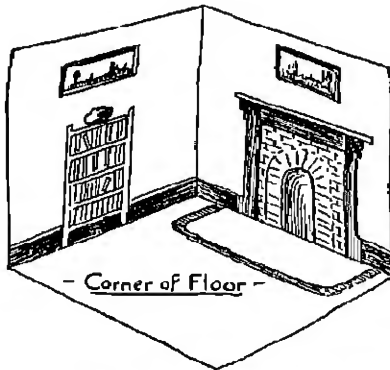
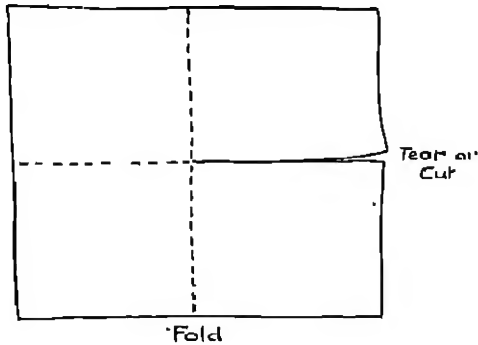


FIG. 5

made from various materials (or illustrations) of nomadic tribes' tents, Lapp hut, wooden house, Eastern "block" house, African kraal. (See Geography and General Knowledge illustrations, PRACTICAL JUNIOR TEACHER, Volume III.)

In this "Homes" project we find scope for the practice of pottery as a craft and for colour study and the making of decorative accessories. The vexed question of the desirability of making paper furniture and paper models of houses, etc., must be faced. There is no doubt that the construction of such models, if based on the originals and made as far as possible to resemble them, is a valuable exercise. As long as it is used as a constructive exercise and becomes explanatory to geographical or social science it is perfectly justifiable. (See Handwork in Rural Schools, Vol. V.) Do not let such "models" take the place of a craft, however.

A more elaborate version of the sand-tray may be used for representation of dwellings of historical or geographical interest. A shallow tin or cardboard box lid may be used with a "back-scene" painted on thick white cardboard. Two or three of these stage settings make a very interesting assemblage. Cut-out figures, in costume, and tree and animal outlines add to the realism of the scenes.

The interior decoration work should be done in connection with the colour study which should form a part of all art schemes.

Decorative accessories might be grouped and worked out as Christmas presents, in whatever media the age and experience of the children allow.

3. *The Public Services*

It is probable that here we have one of the most educative of topics for class work, but the older Juniors, 10 and 11-year-olds, will get most benefit from a study of the framework of civilized life as lived to-day. The order of importance of the various services would vary according to the environment of the school, but the following would be included.

Postal service—and news-sending in general.

(a) Wall frieze of street showing postman, pillar-box, newsboy, telegraph boy, telephone box, etc.

(b) Small posters prepared by groups—a train, telegraph wires, an airplane, etc., as suggested by children themselves, to illustrate long-distance transport of news.

(c) Copying telegraph form, making an envelope and folding writing paper, and writing and addressing a letter. A model money order and postal order filled up. A few typical foreign stamps mounted on a display card.

(d) If possible, a crystal set wireless demonstration or a tin-can-and-string telephone.

Travel by Road, Rail, Sea, and Air.

(a) Wall frieze of landscape showing all types of travel in one composite picture.

(b) Small posters showing different methods

showing types of lighting out-of-doors and indoors.

With children in the top class of the Junior School, some scientific study would accompany the study of this topic. (See PRACTICAL JUNIOR TEACHER, Volume III, Science)

Police and Protection of Citizens.

(a) Wall frieze showing policeman on point duty, safety-first signs, nurse, scout, etc., as desired.

(b) A street or district plan of school and environment. (See Volume II, Home Geography) This may be worked out by simple scale measurements and drawn on a large sheet of brown paper. Small models or cut-outs may be



FIG. 6

"Sport" Silhouettes

of present-day travel. Contrasting modern travel with that of past days.

Food-providers. (Posters of all types, as before.)

(a) The farmer—Sand-tray scenes, or pictures of sowing, reaping, and storing grain. Drawings or clay models of fruits, grain, and vegetables.

(b) The fisherman—pictures of trawlers, nets, etc. Drawings or clay models of fish; model of net (if possible).

(c) The stock-farmer—or the butcher—treated similarly to the above.

Heating and Lighting.

(a) Poster or, if possible from observation, model of pit-head, coal trucks, etc.

(b) Collection of burning fuels—wood, coal, coke.

(c) Gas and electricity. Pictures and posters

made to represent buildings, etc. Should an attempt be made to make a relief model, the difficulty of using contours must be met, and the relief plan built up with clay or papier mâché—an elaborate business. Rural life and city life present different problems, and would condition the work under these headings.

4. Health and Good Habits

Posters and Friezes—

(a) Good habits of cleanliness.

(b) Sport pictures (these cut out from papers, and made into silhouettes as shown in Fig. 6).

(c) Safety-first posters (see Fig. 7)

Accessories to Health and Cleanly Habits.

Girls. Making of—

(a) Comb case in ribbon or leather, or

- (b) Darning- or needle-case, or
- (c) Toothbrush and soap and towel holder in American cloth, or in cloth with lining from old waterproof (copy a "shop" model).

Boys. Making of—

- (a) Wooden or tin soap-dish, or
- (b) Comb case in leather or leather-cloth, or
- (c) Box with division to hold boot-cleaning outfit—made or adapted from ready-made boxes painted or varnished.

The suggestions here given show definitely advanced craft work. Should community work be done in the younger classes under the heading of Health and Good Habits, the work must be simpler. There is no doubt that the working of such topics depends largely on the personality of the teacher and on the intelligence of the class. Where more serious craft work is being attempted either of the last two topics could be followed out on poster and illustrative work only.

The *silhouette* effect suggested under heading (b) of posters and friezes for health is easily

obtained by pasting black mounting paper on the *underside* of newspaper photographs, then cutting round the photo outline and pasting, photo side *down*, on the background paper. An example is shown (Fig. 6) of a frieze showing sports, assembled by a group of eight children. The silhouette form is a valuable training in outline knowledge for young students of pictorial art.

A "play-hour" has been mentioned in these notes. Most teachers will find that Group Work, to be effective and really joyous, tends to stray outside school hours. One afternoon in the week it might be arranged that the children stay if they so desire, and continue work on their assemblages or posters, or otherwise pursue the topic under discussion. Such an after-school activity is much appreciated by the children, especially if their own ideas are given scope. From such beginnings may develop Junior Craft Guilds, and a renewal of the joy of creative work in the leisure time of our young people.

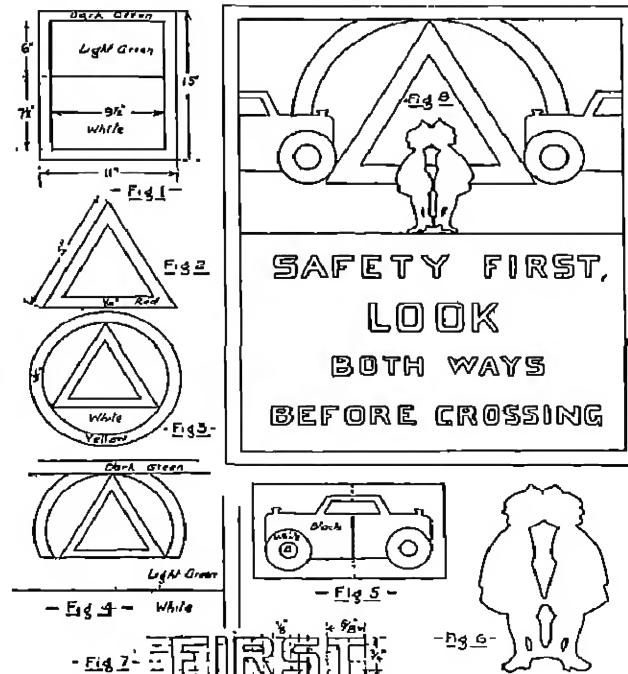


FIG. 7

Example of "Safety First" Poster for Juniors

PAPER TEARING AND CUTTING

THIS occupation, whether regarded as handwork or as an introduction to design, provides a graduated course suitable for Junior Schools.

It has much to recommend it. It makes an immediate appeal to the children; it affords them a constructive means of expression; it trains their powers of observation, and it enables them to appreciate mass rather than line. No attempt is made to cultivate an artificially accurate finish at too early an age; the underlying principle is to encourage creative work—to develop a spirit of experiment and adventure.

The children "learn by doing"

The scheme is logically arranged and will provide an additional occupation for the three or four years of the Junior School Course.

Unlike the majority of schemes based on paper cutting, this course has a definite aim; it does not stop "in the air" at the usual making of patterns and simple outlines of objects. It leads to design—a valuable feature in drawing; it gives the children their first insight into picture composition, it teaches beauty of form and colour, and prepares children for Stencilling.

A further recommendation is that no expensive apparatus is required. Scissors, paste, and coloured paper are all that are required. Indeed, at the beginning, old newspapers and wrapping paper may be used.

Outline of the Course

I. PAPER TEARING

A. *On the Fold.*

1. Simple "hole" patterns
2. Simple objects.
3. Birds, animals, fish
4. Everyday scenes
5. Rustic alphabet.

B. *Free Tearing.*

Trees; animals, flowers.

II. PAPER CUTTING ON THE FOLD

1. Patterns mounted on coloured paper.
2. Designs backed by silver paper or coloured foil.

3. Simple objects and figures, including animal and figure silhouettes.

4. Action.

III. STENCILS

These are backed with coloured foil or silver paper.

IA. *Paper Tearing on the Fold*

At first the paper should, occasionally, be untolded and examined after each tear, and the result noted. If this plan is adopted the children will soon be able to visualize the effects of tears on the different sides, and will be able to make well-balanced original designs with quite simply shaped tears. They should learn, as soon as possible, to follow a set plan. They must obey instructions in order to achieve the desired design. On the other hand, a wrong tear may be overlooked. Any suggestion of repression must be avoided. Initiative, which may involve mistakes, should be encouraged—and paper is cheap. Typewriting paper is admirable for tearing exercises. It is crisp, and gives a good edge. The design may be blacked before it is mounted, or it may be mounted on black paper.

1. *Simple "Hole" Patterns*

The Circle Tear. The first two patterns shown in Fig 1 are produced by folding the square twice across the diameters. Tears are then made in the smaller folded square as shown in the diagram. The children will be able to invent similar patterns using the circle tear. A wide range of designs is possible. The children should use the thumb as a templet for the circles, so that they are uniform in size. If the tears are made carelessly the patterns will lack balance.

The Acorn Tear. For these designs (Fig. 1 C, D) the square is folded diagonally three times, producing a triangle which is $\frac{1}{8}$ the original square. The tears are then made as shown in the diagram, the centre hole being torn first, followed by the tear on the diagonal and then the smaller tear on the other folded edge.

An infinite variety of patterns may be made by the use of these two simple tears. The best

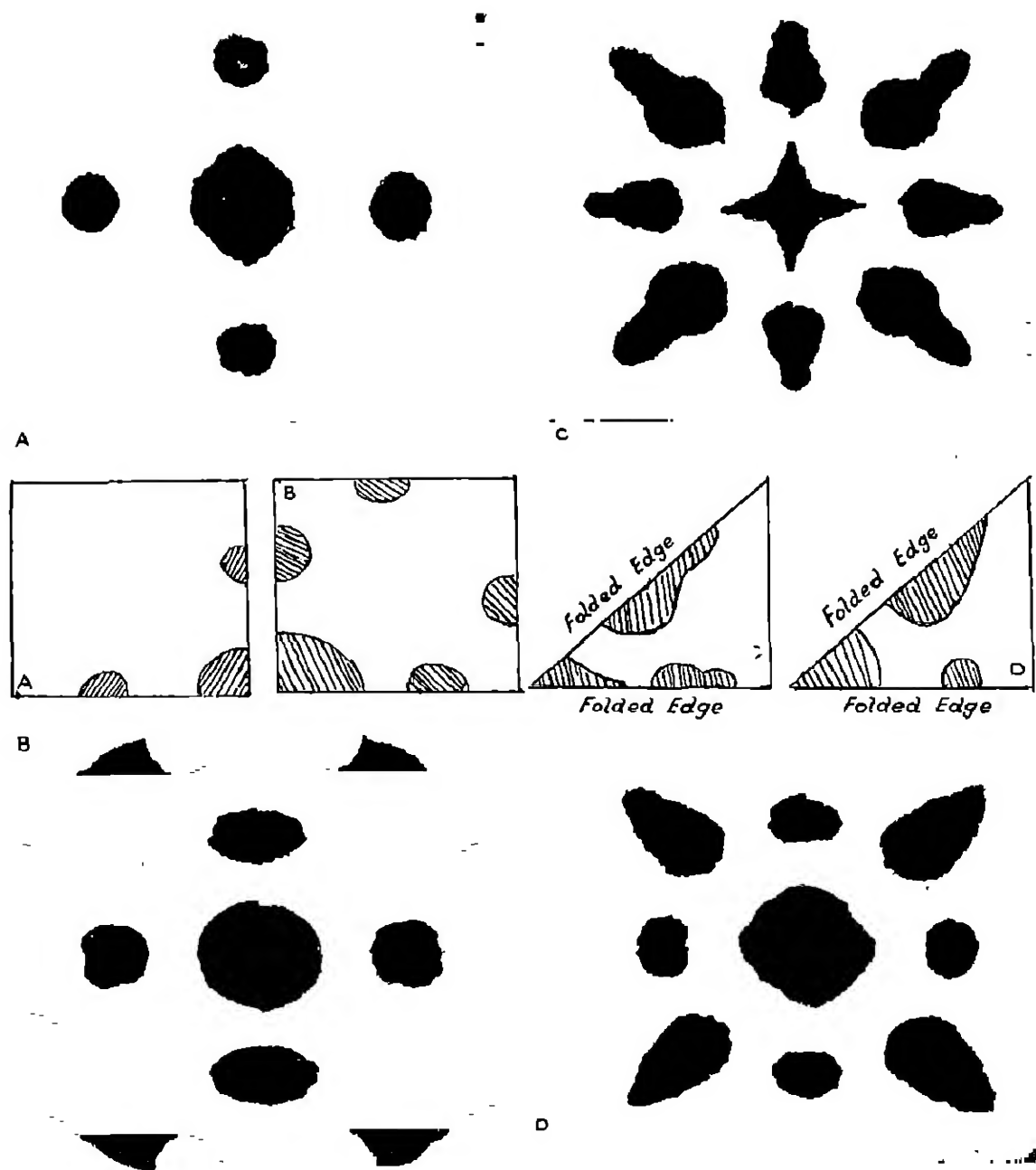


FIG. 1
"Hole" Patterns on the Fold

design made by each child may be used to decorate his home-made scrap or sketch book.

In the tearing exercises the thumbs must be kept close together. The children will require some practice before they can make a good tear. They will soon learn to hold the folded paper firmly to preserve the folds. They will find out by their failures that the tears must be made on the folded edge. Haphazard tearing, except during experimental lessons, should not be encouraged.

2. *Simple Objects on the Fold*

The pupils will be interested in the circle and acorn tears, and other tears that the teacher



FIG. 2

Simple Objects on the Fold

may devise representing leaves and other simple shapes found in Nature.

They will take great delight in mass representations of simple objects. These are produced on one diameter fold reminiscent of the old-fashioned balanced freehand drawing copies.

A few examples are shown in Figs. 2 and 3.

It is advisable to begin with broad masses rather than narrow ones, as the latter require more skill in tearing. The children will be pleased to notice that each exercise produces two representations—black on white, and white on black.

When the children have achieved some proficiency in tearing these objects they may be encouraged to attempt some communal designs, and specimens made by various children may be arranged to form pictures of the dinner-table, the tea-table, or a side-board.

These pictures can be made very real by the addition of a simple line or two—in charcoal or paint—in the background, thus giving the picture "depth."

"Tear-outs," on this principle, of Chinese lanterns, vases, etc., can be attractively coloured in the painting lessons, then mounted in groups.

3. *Birds, Animals, and Fish*

These, again, are torn on the simple diameter fold. The children will be able to supply many simple forms, for which they may be encouraged to search through advertisements in the newspapers and in their picture books.

The horse shown in the illustration (Fig. 3) is torn on a vertical fold, and when opened out one head may be shaped to form the tail.

The chicken, when unfolded, will be found to possess two tails, one of which may be shaped to form the head.

Many simple animal shapes may be obtained in this way, and, although crude in form, they provide for children a real fascination. There is a definite value in creating these shapes in the mass, which so often are beyond the children when they attempt to draw them.

4. *Everyday Scenes*

The child's first effort at picturing a street scene generally results in placing the suggested objects, such as lamp-post, motor-car, houses, and policeman, in one straight line.

The teacher may then suggest another arrangement to show both sides of the street. The illustration given in Fig. 5 B is a child's idea of a car passing along a street. After some questioning he explained that this is a view from a first-floor window.

The lych-gate scene (Fig. 5 C) gives the children some idea of perspective. In this case the teacher's blackboard sketch is copied by the children—they will be quite willing to take for granted the perspective as shown in path and church. If a more finished picture is desired, distant objects or background, simply drawn, will give this effect, but it should not be overdone. At this stage we must aim to preserve the bold character of the work.

5. *Rustic Alphabet*

Most of the letters of the alphabet may be produced by tearing after one horizontal or vertical fold has been made (Fig. 6).

By drawing a vertical or horizontal line

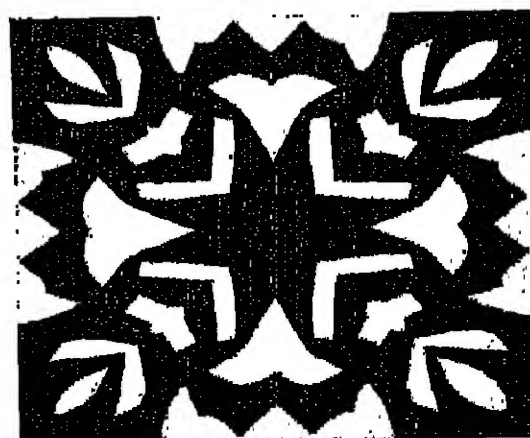
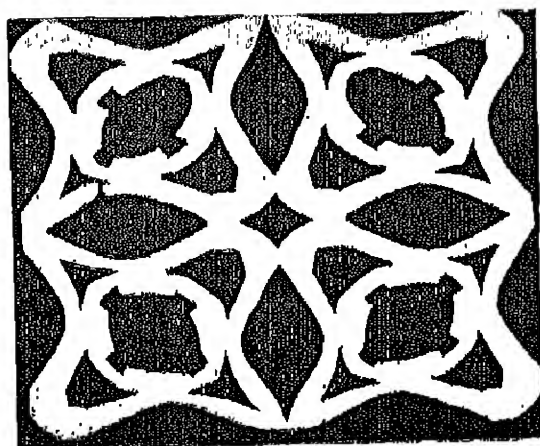
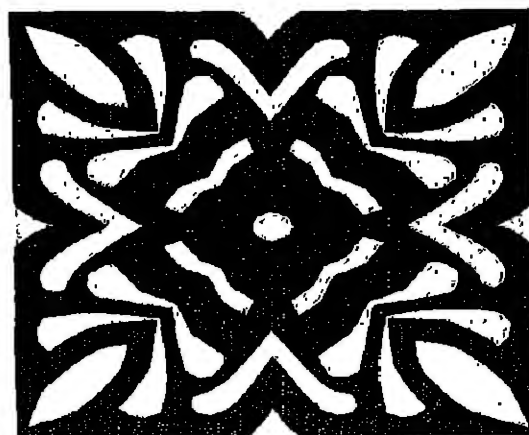
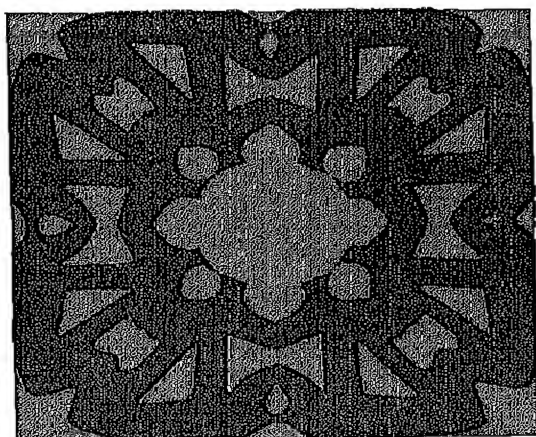
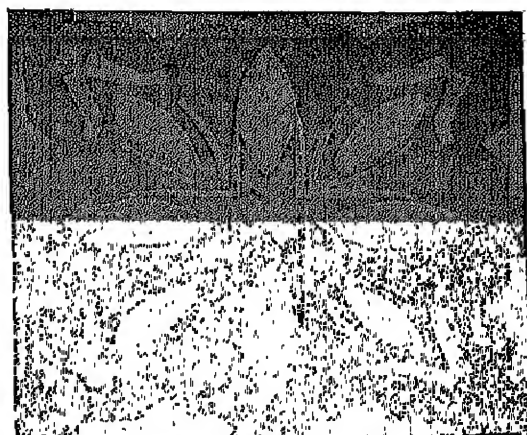
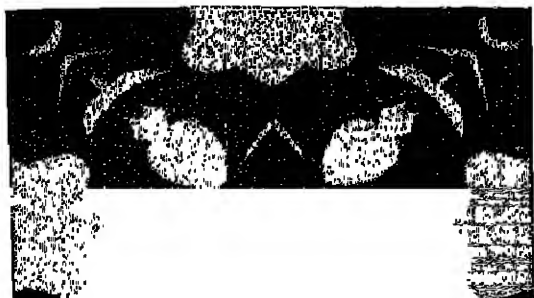


PLATE I
DESIGNS IN PAPER CUTTING MOUNTED ON COLOURED PAPER



FIG. 3

Two Representations by Paper Tearing: White on Black and Black on White

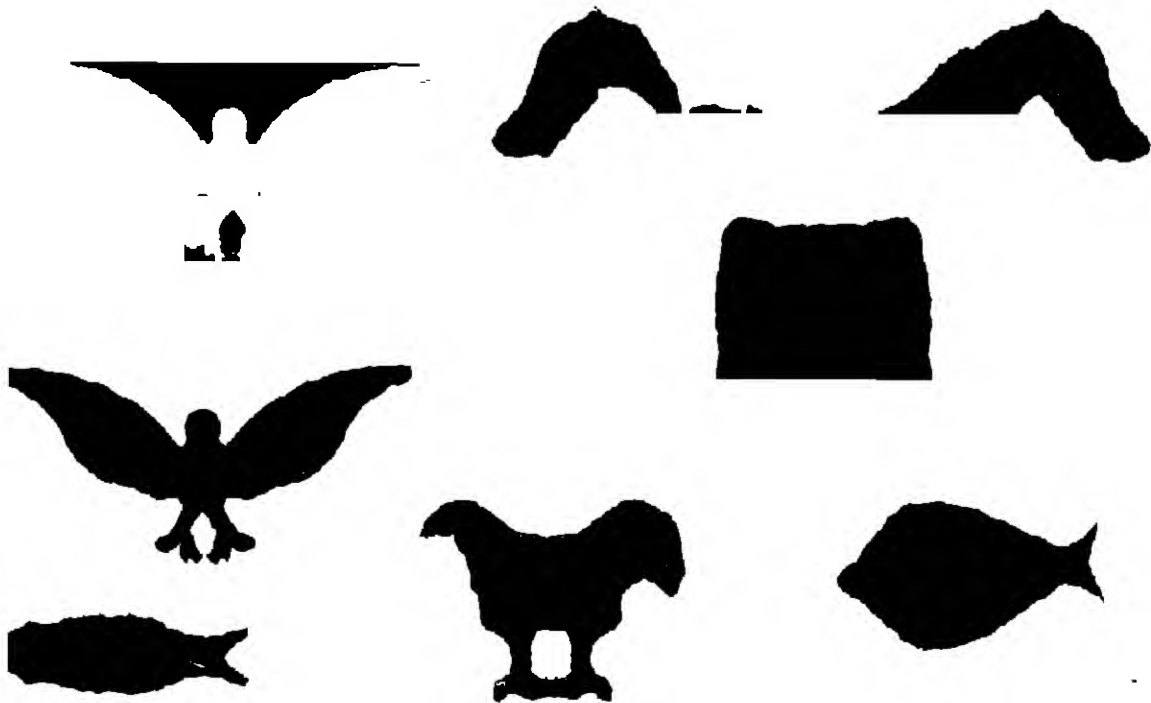


FIG. 4

Birds, Animals, and Fish on the Fold

*A**B**C*

FIG. 5
Everyday Scenes

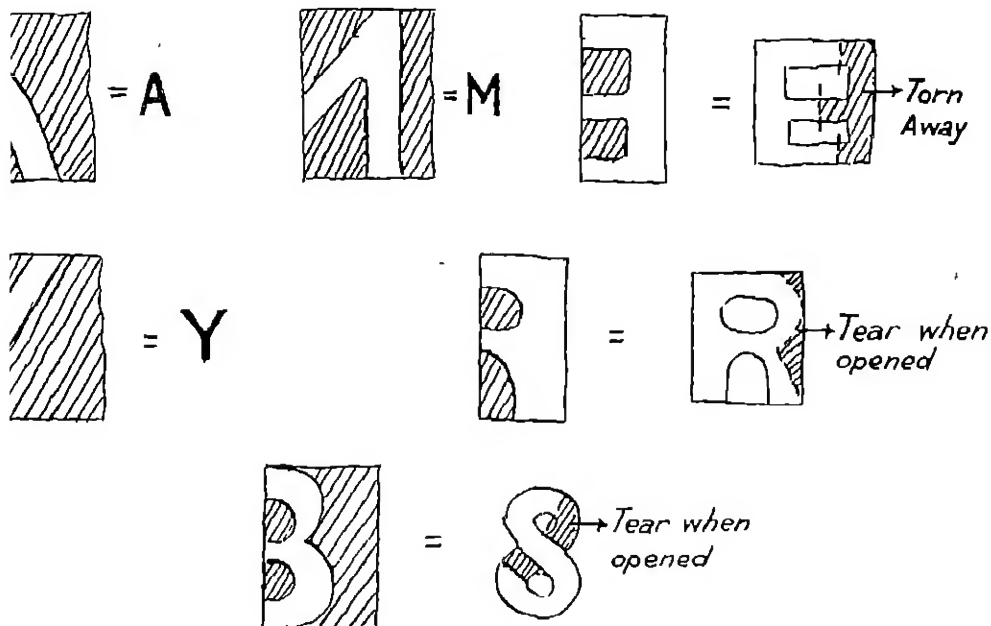


FIG. 6
Rustic Alphabet

through the required letter the teacher will derive his blackboard sketch indicating the tear to be made. A few of the letters, R and S for instance, will require an adjusting tear when opened. The S is best made by first forming a

figure eight by folding horizontally and tearing. The diagrams given in Fig. 5 illustrate the method.

Letters thus made may be stuck on simple booklets made and stitched by the children, thus labelling MY BOOK, SCRAP BOOK, or DRAWING BOOK.

1B. *Free Tearing*

When the children have acquired some skill in tearing on the fold, the next logical step is free tearing. These exercises provide an opportunity for imagination and self-expression—they are creative in character.

The teacher may indicate on the blackboard the shape to be torn, or the outline may be "graphed" for each child. The "soft" edges obtained by free tearing are very pleasing. Artistically, this type of outline is more natural than a hard, uninteresting, sharply defined outline.

Only a few examples of free tearing are given (Fig. 6) owing to exigencies of space, but the children and the teacher will get many suggestions from advertisements in the newspapers and from books. Magazine advertisements will be found particularly helpful.

Scenes. Simple scenes involving free tearing may be suggested by the teacher.

Horatius keeping the bridge, Jim Hawkins hiding behind the powder barrel (*Treasure Island*), a boat passing under Tower Bridge, simple scenes illustrating geographical and historical stories—all provide fascinating subjects and afford much material for discussion.

II. *Paper Cutting on the Fold*

An infinite variety of intricate and beautiful designs may be made by cutting folded paper with scissors.

1. *Patterns Mounted on Coloured Paper*

The designs shown in Plate I and Fig. 8 are developed from the square folded diagonally three times. The cuts are thus repeated eight times when the paper is unfolded. The designs may then be mounted on a suitably coloured background.

The teacher will note that if he requires the

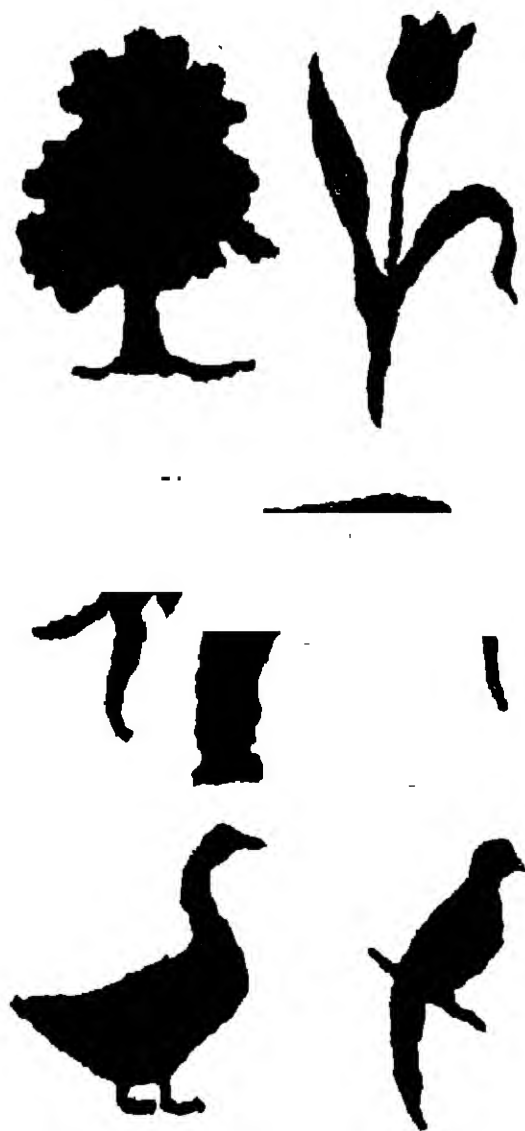


FIG. 7
Free Tearing

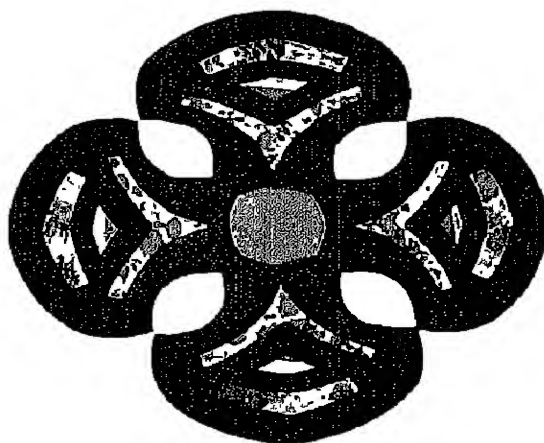
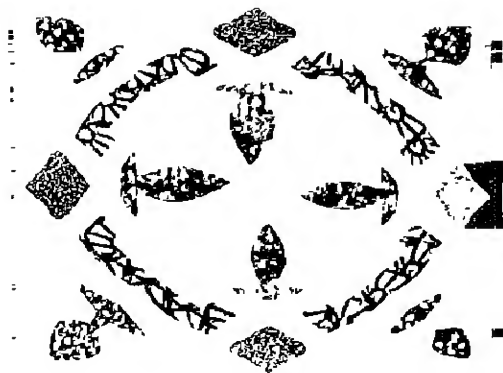
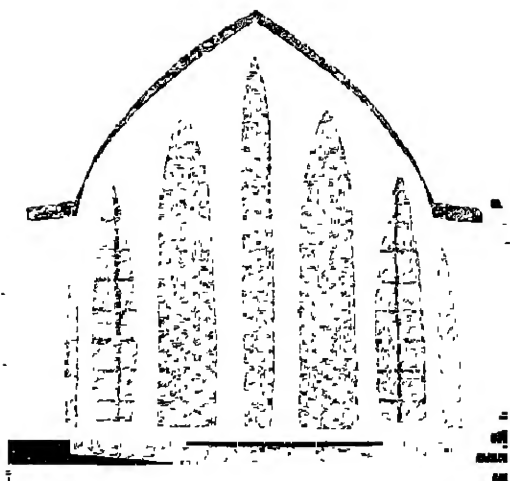
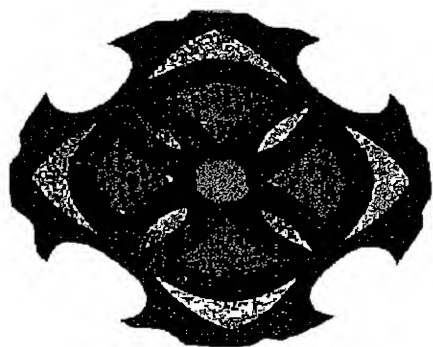


PLATE II
TINFOIL PAPER DESIGNS

children to copy a given pattern it is only necessary for him to rule off one-eighth of the square which contains the given design, and the cuts to be made in the folded paper are easily seen.

"Band" Designs. "Band" patterns make very effective designs which may be used as fret-work panels. If a "band" design is required, the cuts must be made parallel to each other.

For example, the simple band pattern illustrated in Fig. 7 is produced by making cuts as shown in the diagram representing one-eighth of the square, cuts (1) and (2) being parallel and cuts (3) and (4) parallel.

This parallel cutting always gives a "band" effect.

The second diagram shown in Fig. 7 illustrates the method of making the second design. On the folded paper forming the triangle parallel cuts are made at (1) and (2), and at (3) and (4). These cuts give the banded part of the design. A further cut is to be made after another fold along the dotted line shown in the diagram to create parallels (5) and (6).

The children will soon master the method, and will readily follow the design which the teacher will draw, in the triangular form, on the blackboard. They may draw the pattern on their folded squares or may make "first time" cuts at the discretion of the teacher.

When they have mastered the method the children may be encouraged to evolve designs of their own.

Mounting. The designs may be mounted on brown paper or cardboard. When the children have acquired some facility in mounting, coloured papers may be used. These afford very effective backgrounds, and provide an opportunity for colour training.

A selection of background papers of different colours should be available, and the most fitting background found by experiment.

Patterns for mounting should be cut from gummed coloured paper. A glossy background paper gives the best results, and this should be dampened in order to get easy and clean mounting. The cut pattern should be kept dry. If the pattern is wet there is a tendency for it to sag and break, and it is also difficult to get it to set flat owing to the gum drying quickly. Wetting the background avoids all these difficulties.

2. *Designs Backed by Silver Paper or Coloured Foil*

Beautiful and fascinating designs (Plate II) may be made with the aid of the coloured and silver paper used as wrapping for chocolates and biscuits. If the children are asked to put their foil into a common pool, a sufficient quantity will soon be obtained.

The designs are cut in black paper from the square, folded three times, as shown in Fig. 7 and Plate II. The silver paper is then pasted on the back of the design. This affords an excellent exercise in the cultivation of "taste" and balance, and the children will be delighted with their efforts. The silver paper should be carefully smoothed out by putting it on a piece of soft blotting paper and drawing the thumbs gently across the plain side.

It is then cut or torn to the required shape, allowing for the edge to take the paste or gum. Care must be taken to see that the edges do not overlap another hole in the pattern.

This is quite a good exercise in "fitting," and one the children enjoy.

Mounting. The design may be backed by pasting a sheet of paper over the foil to preserve it from buckling. It may then be suitably mounted on cardboard.

Pin-trays, teapot stands, and other useful articles may be made by mounting the designs on glass and binding the edges with *passe-partout*.

The design for a church window and the basket of fruit shown in Plate II may be cut from paper multi-folded in a vertical diameter. A few adapting cuts are sometimes necessary to complete the required design. These are included to show the possibilities of adapting cutting exercises to designs other than those on the square.

3. *Simple Objects and Figures Cut on the Fold*

Objects similar to those suggested in the tearing exercises may be cut from a vertical fold.

The children may first draw the shape to be cut, copying the teacher's blackboard sketch, the more difficult shapes may be "graphed" for each child. Free cutting, of course, is the

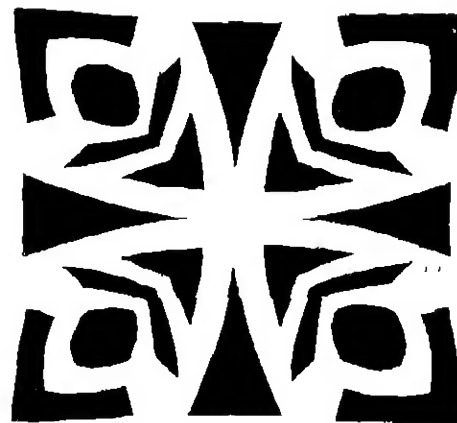
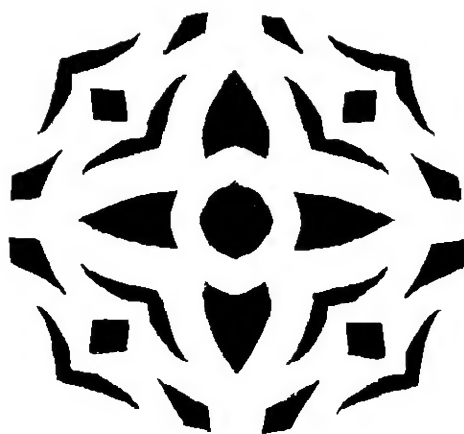
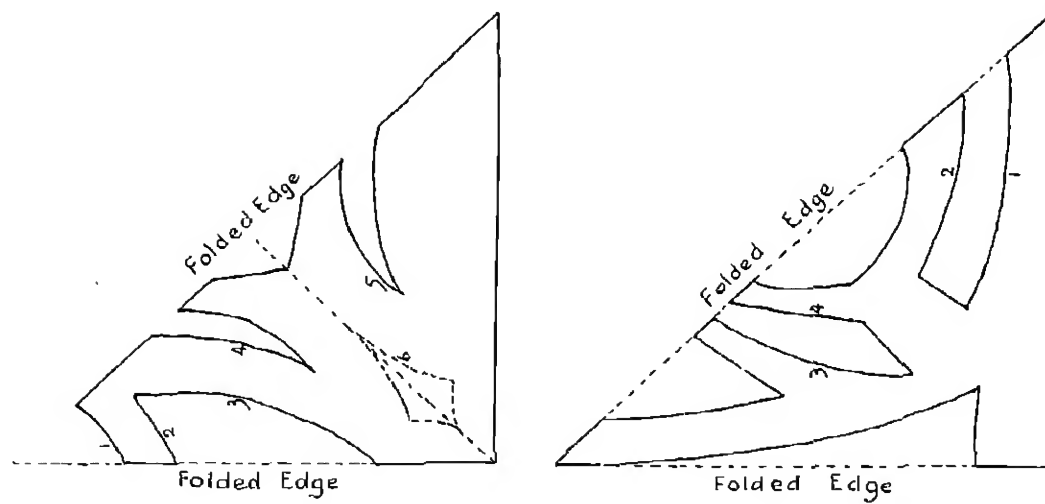


FIG. 8
"Band" Designs

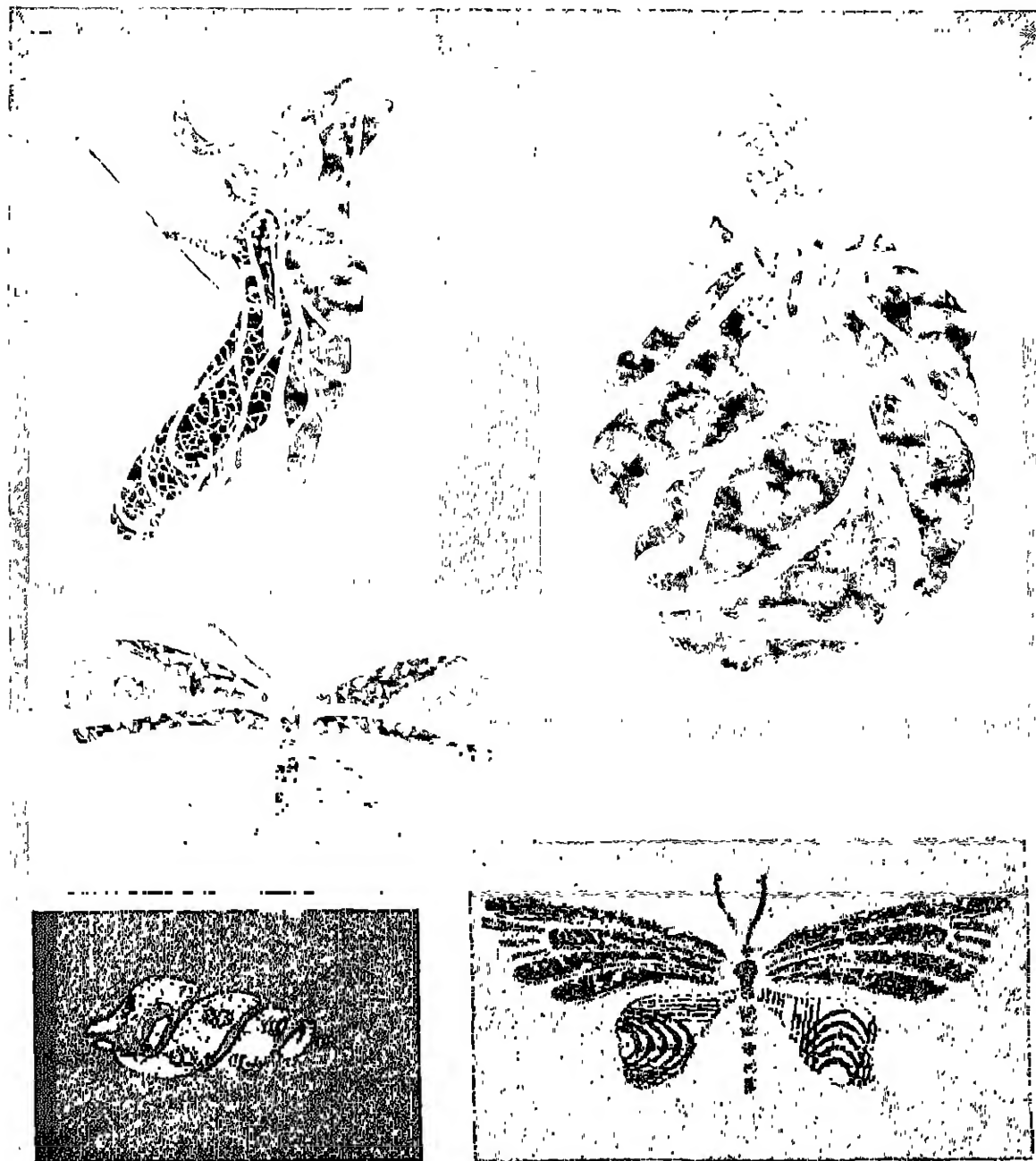


PLATE III

STENCILS BACKED WITH SILVER PAPER BY PUPILS OF 8-11 YEARS

Stencil of Lady on the right reproduced by courtesy of Messrs Deans, Ltd

ultimate aim. A few examples are illustrated in Fig. 9.

Some of the common animal shapes may be made more interesting by cutting them in sections—head, body, legs. This will give the

Ordinary newspaper advertisements will suggest a variety of subjects.

For instance, the typical fashion-plate lady, holding a purse in front of her, can be cut out in folded paper, and with very little adjustment

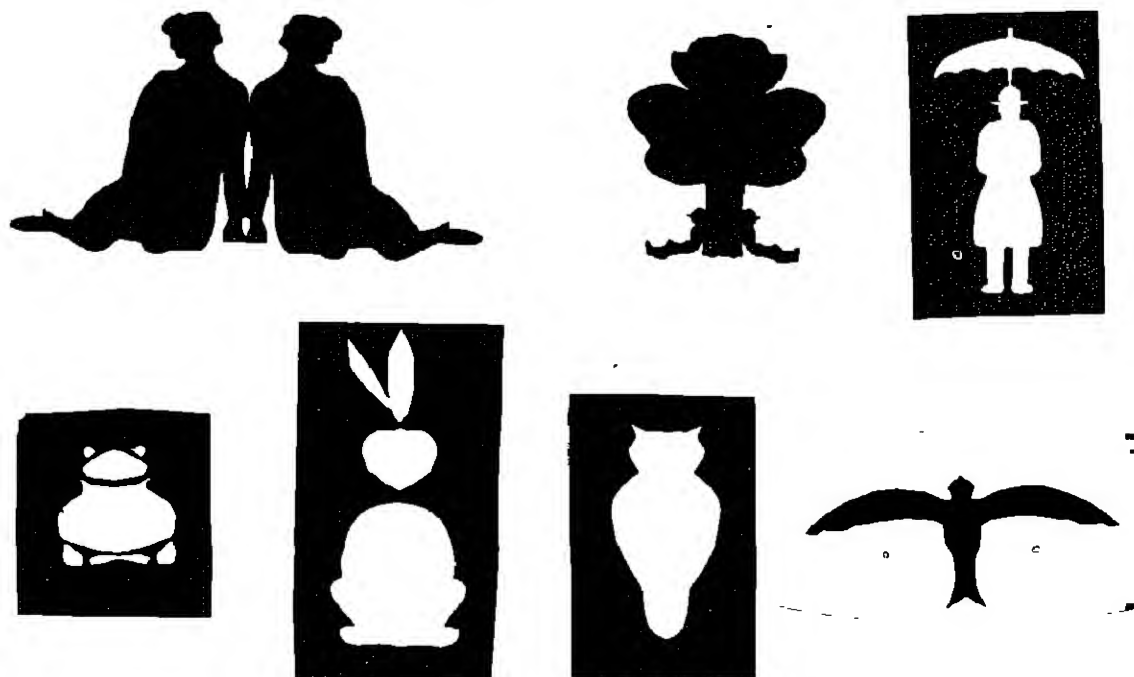


FIG. 9

Simple Objects and Figures Cut on Vertical Fold

children a practical understanding of the need for "ties" in stencilling.

Free Cutting

Free cutting, as distinct from cutting on the fold, may be taught on the lines indicated in the notes on free tearing. Ample opportunities will be found for exercises on animals, story illustrations, and notebook covers. MY BOOK or SCRAP BOOK as a title, backed by silver paper, forms a very effective cover for a pupil's book.

4. Action

By cutting complete shapes on the vertical fold interesting repetition may be obtained, and good action studies created (Figs 10 and 11).

to the purse the children will unfold the paper to show the lady cordially shaking hands with a similar lady.

Sports pictures may be used with little adjustments of this kind—e.g. boxers, footballers, and hockey players.

These exercises should be carried out in fairly stiff paper for easy mounting

III. Stencils Backed with Silver Paper or Coloured Foil

A start should be made with the simplest of stencils, and a fairly thin paper. As the stencil is going to be backed, it is better to risk breaking a tie or two rather than ask a beginner to cut a

stencil in thick paper—a difficult task. As long as the child can see a pattern coming slowly he will cut carefully, but if the paper offers too much resistance a sawing operation will produce a very ragged stencil. The possibilities are only limited by the child's skill, and the child's skill is, in many cases, proportionate to his interest. One simple stencil successfully accomplished will fire the interest and imagination, and coloured foil will be in great demand.

Some really artistic effects can be produced by this method of backing stencils with silver paper. We illustrate in Plate III a few examples of this fascinating occupation.

Hints on cutting and fixing the foil are given on page 991. The importance of the initial process may again be emphasized.

Pupils should be encouraged to "see" the finished design before starting work: careful planning is necessary to achieve balance of colour, and the foil must be chosen with discretion. Encouragement in this develops originality and stimulates imagination. This creative and constructional work has great educational value. Our aim is to get a harmonious composition, with colour balance. To illustrate this point further, attention may be called to the butterfly stencil in Plate III: the pupil has just missed the "balance" in indicating the beautiful ring markings.



FIG. 10

Action: Cut-outs of Boxing Match



FIG. 11

Action Study: Jumping

STENCILLING

WHEN the necessity first arose for repeating a small shape or pattern without variation over a large surface, it was found not only that the labour involved was monotonous and slow, but also that there was a danger of new ideas creeping into the scheme as the work proceeded. Difficulties such as these have always been surmounted by man's creative genius, so in this instance the work of copying was made easier and more accurate by the invention of the stencil

Paper Stencil Plates

A stencil is usually a thin plate of paper or metal in which designs for one purpose or another have been cut. Reproductions of these designs are made by placing the stencil plate over the surface to be decorated, and painting in the designs through the spaces cut away.

In the course of a broader development of the child's interests, a practical application of this method of reproduction can very well be made in the earlier stages of the Junior School in connection with the work of paper tearing.

Paper Tearing

In this work the child discovers the fact that, by folding pieces of paper once or twice and then tearing certain portions out of them, various simple shapes are produced when the papers are unfolded and laid out.

These pieces of paper, with their torn-out shapes, are to all intents and purposes stencil plates, and can be used as such.

In utilizing the work so produced as a means of reproduction, an added interest is given to the growing knowledge of form by the addition of its natural complement of colour.

Colouring with Pastels

When adapting the result of paper tearing to the process of stencilling, the media used to convey an impression of the torn-out shape to

a separate piece of paper can be either pastels or water-colours.

If pastels are to be used the design should be stencilled on to a sheet of coloured pastel paper, each child being allowed to choose a suitably coloured pastel.

The stencil should then be placed upon the coloured paper and held firmly in position with the left hand. It is important that the stencil plate should not be moved while the colouring is being done, otherwise an incorrect impression will be formed.

To produce the impression the point of the pastel should be drawn across the aperture of the stencil plate in a series of parallel strokes.

The work having been completed, the stencil plate is carefully lifted from the coloured paper.

Colouring with Paints

When paints are used, the colours, if in cake form, should be mixed with as little water as possible; if in tube form no water will be required, but a stencil brush should be used.

In this instance the stencil plate is placed upon a sheet of cartridge paper. The paint can be conveyed to the paper by means of an ordinary paint brush, but it is much better to use a stencil brush, which is formed of shorter and stiffer bristles. The brush in either case should only take up a little colour at a time, and this should be evenly distributed over its surface by first lightly dabbing it upon a clean portion of the paint box.

In working upon the stencil the brush should be kept in a perfectly upright position, and *dabbed* over the aperture of the plate, great care being taken to see that the bristles are bent as little as possible. The work should never be *brushed*. Each time the brush is replenished the same precaution of evenly distributing the paint should be taken (Fig. 1).

When the colour has covered the cartridge paper exposed by the apertures in the stencil, the plate is carefully lifted and the work allowed to dry.

On examining the impression it will be found that, owing to the tearing process, the edges of the plate have produced an outline which is broken and soft. The former quality may or may not be an advantage in any particular design, but the latter is certainly one of the

made in developing a sense which will be of great value later on.

The child's interest in the careful rendering of the stencil shape should be stimulated, no matter what the result of the tearing may be. The work is so comparatively easy that there is always a danger of expecting too quick a result without due care and attention.

The shapes used should be small and simple at first, to be gradually increased in difficulty and size as the work proceeds.

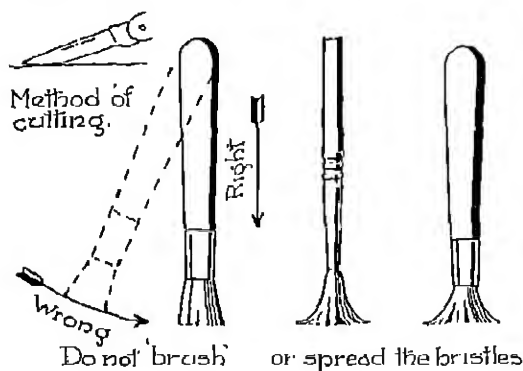


FIG. 1

Cutting Stencil and Applying Paint

charms of stencil-craft, and should be encouraged even when the stencil plate is cut. Here, of course, the effect is gained by the right use of the brush.

Stencilling and a Sense of Proportion

So far the exercise has been considered from the standpoint of form and colour only. The stencil plate may be put to a further use in developing the child's judgment and sense of proportion.

In the later stages of the child's school life the process of stencilling will be used for practical purposes, such as decorating end papers and covers for books, and there will be many other subjects where a proper sense of proportion will be all-essential. If in the earlier stages the child is asked to place the stencil plate in a definite position upon the paper, such as in the middle, top left-hand corner, etc., or to tear a stencil shape which shall nicely fit a piece of paper of definite size, a beginning will have been

Stencils Cut with Scissors

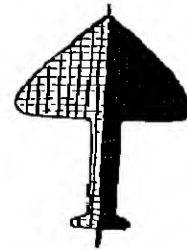
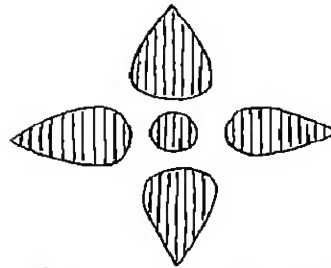
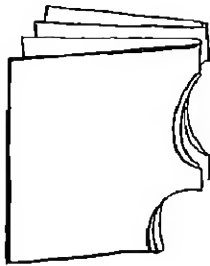
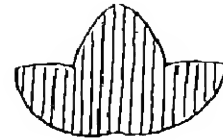
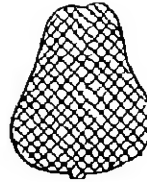
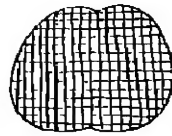
The process of tearing is followed by the cutting of simple shapes in folded pieces of paper by means of the scissors. In this work the shapes can assume a more definite form, and squares, diamond shapes, triangles, and circles can be used, singly at first and in combination later, to form symmetrical patterns. The accuracy of the cutting can be assisted, in the first instance, by means of an outline drawing made upon the folded paper with a pencil and ruler, but for the simpler shapes this assistance can be eliminated as the child's sense of shape and proportion grows. (See section on Paper Tearing and Cutting.)

Repeat Designs

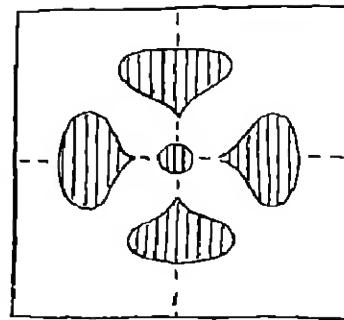
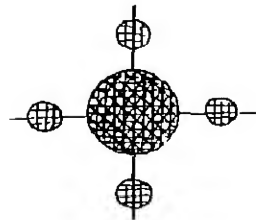
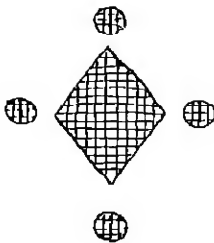
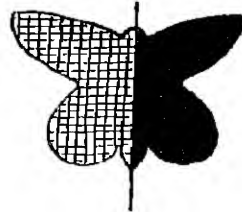
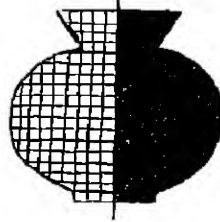
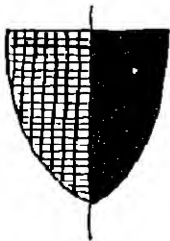
In addition to the single reproduction of these formal shapes, simple designs may be attempted by repeating the unit of the stencil plate at regular intervals. The child can be assisted in this process by the use of guiding lines drawn in pencil upon the paper.

In the P.J.T. Pattern Making Chart adaptation of a design to stencilling may be pointed out to the children.

Simple borders may be formed by the repetition of the unit along a pencil line which has been divided into a number of equal spaces. A square and its diagonals may be drawn upon the paper, and the unit stencilled at each of its four corners and in the centre. The oblong, diamond, and triangle each lends itself to many variations in the placing of the single unit or in the alternation of two different units. This gives an opportunity for the use of more than



Paper tearing



Tearing and punching

FIG 2

one colour in the scheme of the design. A different colour may be used for alternate units or for alternating units. These colours should be chosen and mixed ready for use before the stencilling is commenced. The colours should never be mixed with the stencil brush, as the

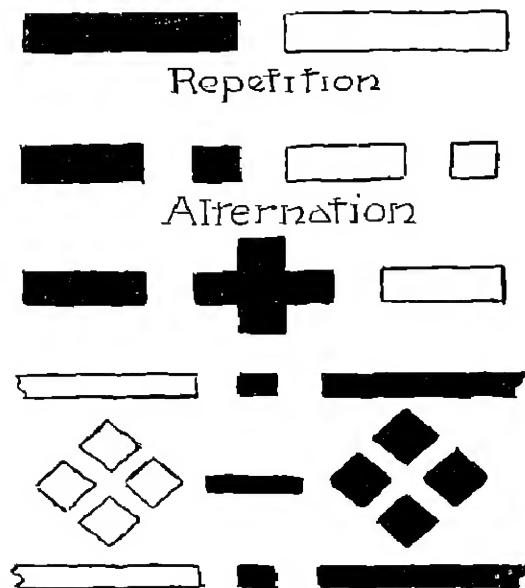


FIG. 3

process spoils its shape, and it is more difficult to clean than the ordinary paint brush. The colours should always be mixed with the paint brush, or a little metal rod.

Applying the Colour

Where the paint brush is used for both mixing and stencilling it should be thoroughly washed out and dried after mixing, so that the stencilling colour may be applied to the paper in small quantities only. If the colour is too wet it is liable to run under the stencil plate, and so spoil the reproduction, or else make the paper curl so that the plate cannot be used a second time with safety. If the colour is used at the right consistency, some little time is required for both plate and reproduction to dry.

A stiffer paper can be used when cutting the stencil with the scissors. This will counteract the strain placed upon it by repetition work.

Variety in Design

In the cutting of simple combinations of the formal shapes to constitute a stencil unit, a valuable lesson in design can be given. Where several details are placed together to form a single unit they are rarely of the same dimensions. This is one method of obtaining variety in a pattern, and preventing it from becoming too monotonous when repeated a number of times. To obtain this variety one shape in the pattern should be made larger than the others, such as a large diamond in the centre with a smaller diamond above and below. The small diamonds will always look better if they bear a certain proportion to the large one—they can very easily look either too large or too small. An attempt should always be made to obtain suitable dimensions for these secondary details.

Introducing a Colour Scheme

The unit so produced can be made the subject of a simple colour scheme, the separate colours being worked upon the same plate. To prevent one colour finding its way into the aperture intended for another, small pieces of paper can be used to cover the apertures not in use, and so form a shield. In the small designs in use it will hardly be necessary to hold the shields in place, but care must be exercised in removing them or the plate may be disturbed. The name of the colour to be used in an aperture should be written upon the shield covering that aperture.

Designs of a freer nature can also be cut in conjunction with various foldings at this stage. These can also be made the subject for simple colour schemes, the same methods being employed as before.

Using Perforations in Designs

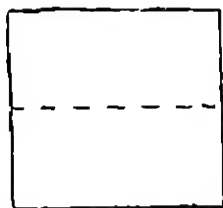
At this stage use can be made of the leather worker's six-hole punch pliers or the single punch for the purpose of perforating entire patterns or secondary details for larger designs cut with the scissors.

When a hole is being punched a small piece of cardboard should be placed between the paper and the lower jaw of the pliers. This will ensure that the paper will be cut right through.

Where the pattern is formed entirely of punched holes guide lines can be used, and the

tion of two shapes such as a square and a larger diamond intersecting, each shape being perforated with a different sized hole; and by free shapes in which the perforations are graded in size, and simple border designs formed by lines of equi-spaced perforations of various sizes.

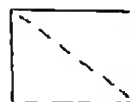
Folding and cutting with scissors



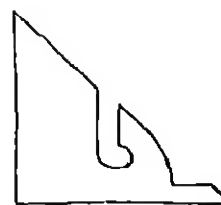
First folding



Second

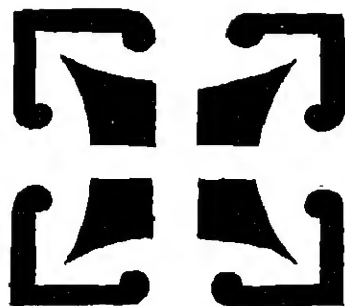


Third folding



Cutting

Little ability required



Pattern produced

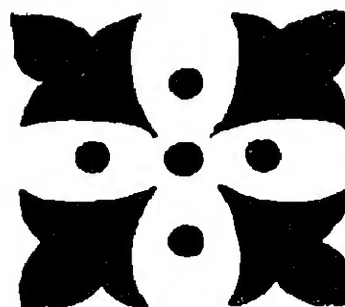


FIG. 4

centres marked for the apertures. A large number of designs can be created by punching along the outlines of formal and free shapes. Perforations of similar size should be used when beginning this type of work.

Variations can be obtained later by forming corner pieces with large perforations, and filling in the remainder of the line with smaller ones, by radiating lines on which the perforations diminish in size from the centre; by a combina-

The paper can either be folded or kept flat during the operation of punching.

Where the punched pattern is used in conjunction with that cut with the scissors, it can be used to form an edging or fringe parallel to, and at a short distance from, the edge of the cut pattern, or to fill spaces of another shape surrounding the cut pattern (see Fig 6).

If the perforations are used between the apertures formed in free cutting, care should be

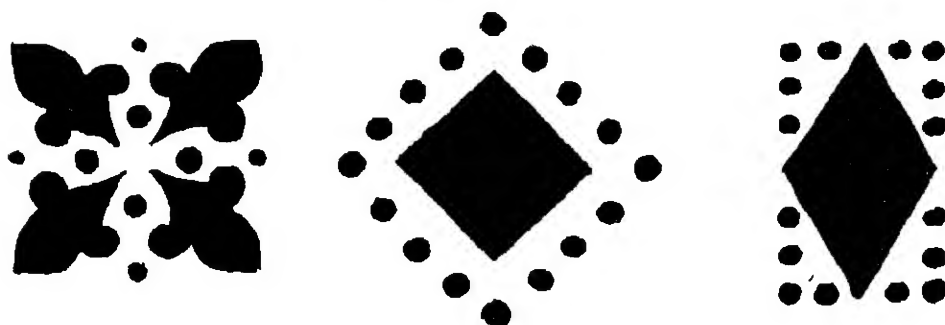


Single folding and



more difficult shapes.

FIG. 5
Stencils cut with Scissors



Cutting and punched work.

FIG. 6

aken to see that they form an integral part of the design.

The punched holes lend themselves to a variety of colour schemes, and if care is taken no difficulty will be experienced in varying the colours in adjoining apertures.

Colour

For stencilling, the same colours as recommended in the article on colour training can be used, viz.: Chrome yellow, gamboge, vermillion, crimson lake, Prussian blue, ivory black. To these should be added Chinese white, which is useful when working on grey or dark papers, to prevent the colours from sinking in and becoming too dull.

If tube paint is used colour mixing is quite straightforward, but if cakes are supplied the colours must be mixed very stiffly on the flat lid of the paint box, only a drop of water from the tip of the finger being added. Poster colours can be employed but care must be taken that the brush is not over-charged as these colours are often a little too liquid. For work on cloth, Ceroline or oil colours are good, but brushes must be washed perfectly clean in warm soap and water immediately after use. A fine variety of coloured papers for stencilling can be made by giving white drawing paper a thin coat of poster colour. A little unevenness in the coat is rather an advantage than otherwise. Such coloured paper makes one independent of bought papers, and often makes for improved colour schemes.

To secure purity in mixing, thereby developing the child's colour perceptions, care must be taken in the right choice of colours. For instance, if a bright green is required, the blue selected *must* be one that has in its composition the other colour necessary to produce green—that is yellow—and the yellow must be on the blue side of that colour. If the blue or yellow selected contains red in its composition, as do cobalt and gamboge, then a third colour has been introduced, and the result will be a grey or dull green. The same principle applies to the other mixtures produced with the three colours, i.e. orange and violet. Scarlet lake and gamboge are used to produce the former, and cobalt and crimson lake the latter. If given the opportu-

nity the child soon discovers just those colours which give a bright and clean mixture.

Necessity of Definite Purpose

It is always advisable in the intermediate and later stages of Junior work to design the stencil plate with a particular aim in view, such as the decoration of paper and cardboard work done in the class, although it may never be used for



FIG. 7

An Attractive Stencil cut on the Single Fold

that purpose. It should always be remembered that stencilling depends entirely upon another craft for its existence.

Cutting Plates with a Knife

Following on the work executed with the scissors and the punch comes the stencil plate which is cut by means of the knife. Although confined to designs of a simple nature, this phase of the work requires greater care and precision than the work preceding it. The tools and materials necessary are a stencil knife, or a well-sharpened pen-knife, and a smooth, hard surface for cutting upon, such as an old drawing pad or a piece of stout board. Ordinary cartridge paper can be used for the plate in most instances, but where a number of reproductions are to be taken from it the paper should be water-proofed, or special stencil paper used.

Preparing a Stencil Paper

It is useful and economical to prepare one's own paper, as use can be made of any scrap which is of suitable thickness. A mixture of

shellac and methylated spirits is most commonly used for water-proofing the paper. It can be obtained ready for use, and is known as French polish. It has the advantage of drying very quickly. The paper is coated thinly on both sides with the mixture before the design is drawn upon it, a flat hog-hair brush being used for the purpose. It should be suspended from

a line or cord while drying. Other water-proofing mixtures are patent knotting, a solution used by painters, and boiled linseed oil to which a little turpentine has been added. The former dries very quickly; the latter takes several days but has the advantage of rendering the paper partly transparent, so that patterns may be traced upon it.



FIG. 8

Stencils from Plates cut with Knife

Cutting the Plates

When cutting the stencil, place the paper upon the pad or cardboard and hold firmly with the fingers of the left hand. The cutting edge of the knife should be used as much as possible, the point being brought into requisition only at the end of the cuts. The incision should be

developing simple forms, parallel lines are drawn a quarter of an inch away on either side of the diameters of an inch and a half square, so that four small squares are formed in the corners of the large square. By slightly rounding off the corners of the small squares which are nearest to the diameters of the large square, and punching a hole where the diameters of the large square

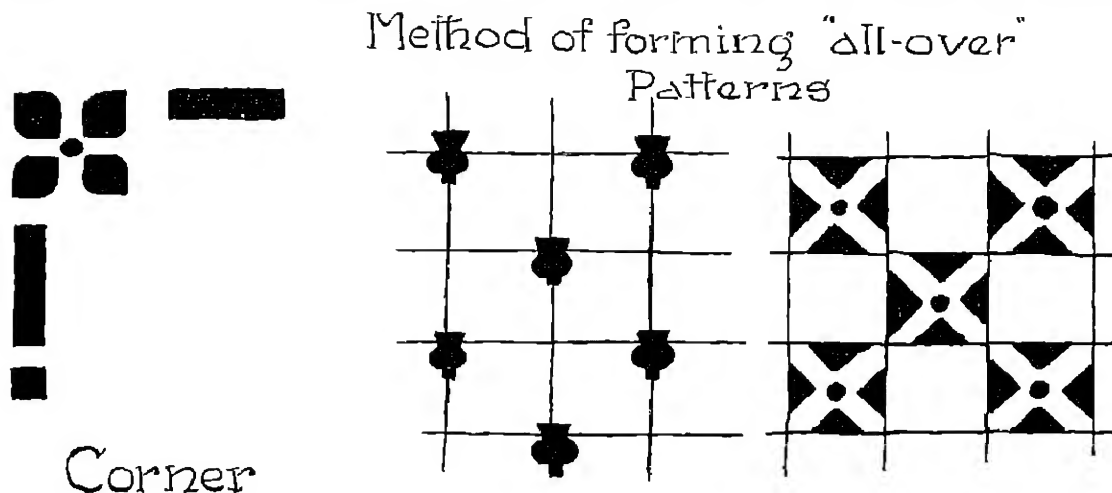


FIG. 9

clean and sharp, and the work should be done gradually and carefully.

Designs for Prepared Stencil Paper

Simple straight-lined patterns should be used to commence with, and these should be drawn upon the stencil paper with a pencil and ruler. Narrow borders can be designed by drawing parallel lines a quarter of an inch apart, and dividing their length into quarter inches. Four of the squares so formed are blacked in with the lead pencil to indicate a unit. The next square is left plain, and the next square blacked in. This produces a pattern of an alternating oblong and square with a space between them. Variations can be produced by alternating an oblong with two or three squares, or by introducing, in place of the squares, circular perforations made with the largest nib of the punch pliers.

As an example of the methods employed in

intersect, a flower-like form will be produced. When the design has been drawn on the stencil plate it is a good plan to let the child fill in with colour the spaces which are to be cut out. This will enable him to see the probable result of the stencil, and will save confusion in lines when cutting out.

Utilization of Stencilling

At this stage the stencil can be utilized for the decoration of book covers, end papers, calendars, boxes, and work done by the child in other lessons.

Each object decorated will have its own problems in the suitability and the size of the stencil. The work should be graded so that in the satisfactory solving of these problems manual dexterity may be gradually developed, and a knowledge of the elementary principles of design gained.

CARDBOARD WORK LEADING TO SIMPLE BOOKBINDING

THE feature of this section to which the writer wishes to draw the particular attention of the reader is the gradation of the operations and difficulties in the scheme. It is probable that most of the problems which the teacher meets in the handwork lesson arise because of poor, or a complete lack of, gradation in the scheme of work. With the normal child, a properly graded scheme of work is almost bound to give good results, always provided, of course, that the teacher pays the normal amount of attention to accuracy and carefulness on the part of the pupils. No scheme, however presented, will eliminate the necessity for constant alertness regarding these two essential points.

Variations on the Scheme

We have given, besides the straightforward scheme, a few variations on some of the ideas it contains. These are intended to be used when the teacher finds a child apparently unable to move forward with the rest of the class. Instead of making a child repeat the making of an article which has not been very well finished, the same operations are repeated in another form. At the same time it is probable that, with such children, better educational results will be obtained if the difficulties of each problem are few and the work kept on a fairly simple level. There is no need to impose great strain on the slower child by attempting manipulations beyond his mental powers. Much rather give him something within his powers, and demand as high a standard of accuracy and neatness as he may be capable of producing in the simple problem.

We have, therefore, given alternative forms of the envelope, folio, album, pocket book, and blotter. These may also be useful in varying the work in the scheme for the class.

Colour Schemes

It is to be understood that the colour schemes suggested are merely suggestions. It is recognized that "What is one man's meat is another man's poison" applies with no less force to colour than it does to anything else.

Materials

The following is a list of the materials used in the scheme, together with approximate prices. The latter can only be approximate prices, as there is often a great difference between the catalogue prices which we give and the contract prices at which the goods are supplied to schools through the L.E.A.

Strawboard 16 oz. board is the most generally useful thickness. Sheets may be glued or pasted together if a greater thickness is required; 2d. per sheet.

Coloured Paper. Good pastel quality in brown, black, blue, green, grey, orange, cream colours; 1s. 6d. per quire.

Paste. 1s. 6d. per lb. tin. Use a thick paste which can be thinned down if necessary, rather than a thin paste, which is expensive.

Thin, Coloured Paper. Spectrum - coloured paper, three tones of each of a few colours; 1s. 6d. per quire.

Bookbinders' Cloth. Of good quality in various colours to match the coloured paper. Average price about 1s. 6d. per yard.

Thread. White, grey, and black linen; 3d. per reel.

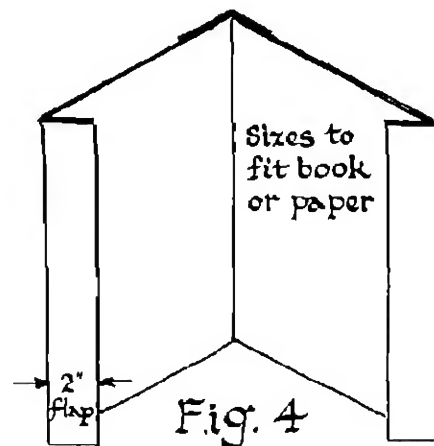
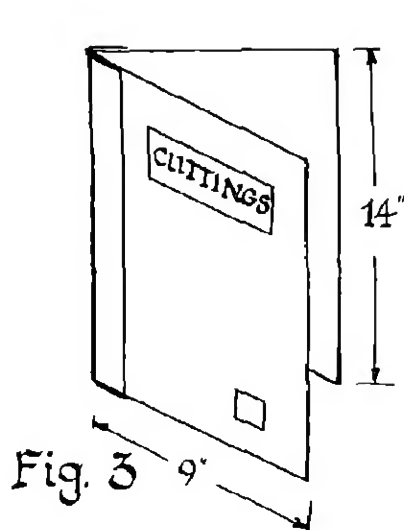
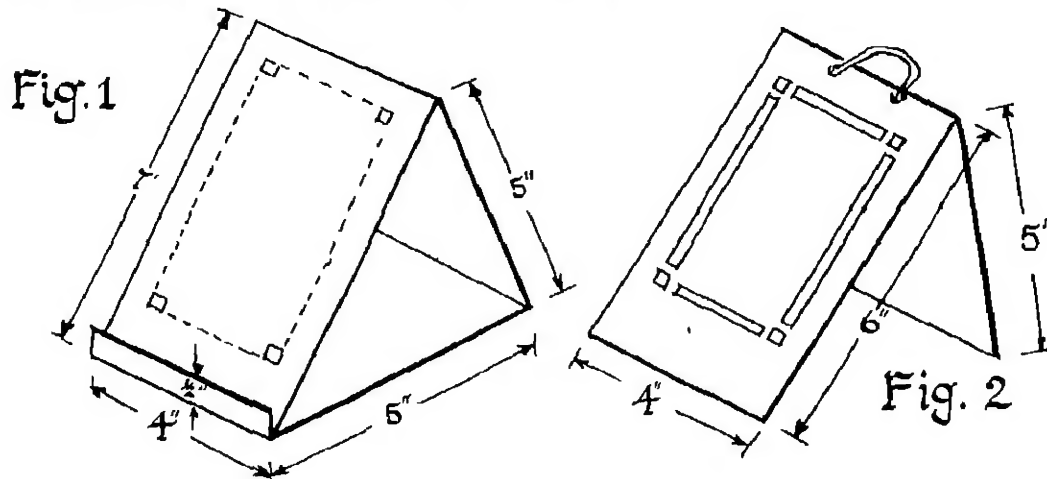
Needles. Small darners, No. 4; 1d. per packet.

Scissors. Pointed, or rounded, ends, 4½ in.; about 6s. 6d. per dozen.

Manilla Paper. Natural colour, 1s. 6d. per quire.

Knives. Cardboard modelling, bevelled end; 8s. per dozen.

SIMPLE PROBLEMS IN MANILLA OR OTHER THICK PAPER FOLDING AND PASTING



FIGS. 1-4

"*Sticks*" For stick-printing, made from K.G. sticks, small pieces of wood, cylindrical, square, triangular, and oblong in section. These may also be made from old pencil ends, rubbers, corks, and match-sticks.

Lino Blocks. Small, glued on to the ends of pieces of wood about 4 in. long, with 1 in. square surface for block.

Oil Colours. Ordinary paint as sold in tins will serve for making oil-colour papers.

The Decorations

It is more and more coming to be recognized that handwork and art are inseparable. No craft work can be done without deciding *what* is to be made, *how* it is to be made, *where* to place the component parts of the structure called the design, what *proportions* shall be used, the *colour* to be introduced, and so on right through the elementary principles of designing.

Therefore most of the following examples of cardboard work reflect something of the finer aspects of craft work. The process of refining is always going on, and it is not difficult to see that most of the work illustrated here affords the opportunity for the application of some form of decoration.

These decorations take the various forms which can be carried out in the Junior School. Stick-printing, paper-cutting, paper-tearing, paste-colour papers, oil-colour papers, small lino-block printing, and stencilling are all used in the simplest possible form.

Problems in Setting Out

A good deal of time is often spent with Junior children in setting out geometrically the developments of envelopes, book jackets, and so on. It should be realized that the problem in geometry contained in many of these forms is probably one for Standard IV, while the handwork involved may be easily carried out by Standard II. To attempt to force Standard II through the difficulties of setting out in the usual way is really a waste of time. Fig. 11 shows the use of a pattern in cardboard work.

The pattern should be of a size to allow the

paper to be folded to give the desired shape. When opened out it will be observed that the lines of setting out are all there, quite true, and ready for cutting to the shape of the development. This plan can be carried out with any shape of envelope, and will be found quite effective in producing accurate work in a great deal less time than would be required if any other method of setting out were adopted. Moreover, the time of the handwork lesson is thus spent on "doing" instead of in setting out. This simplifying of processes is one of the best aids in working out a good gradation in a scheme.

First Projects

Desk Calendar or Menu Card (Figs 1 and 2). Fold a piece of thick coloured paper, such as pastel paper, and set out to dimensions given in Figs. 1 and 2. Fold, open out, run the edge of a bone folder along the creased lines. Fold into position. Design suitable pattern in stick-printing and apply in water-colour.

Folio in Manilla Paper (Fig. 3). Fold a sheet of manilla paper in two, as shown in Fig. 3. Cut or tear carefully a strip of bookbinders' cloth, 2 in. wide. Fold the cloth down the centre, open out again, and lay it on a piece of waste paper, wrong side up. Paste the upper surface, open the folded manilla paper, lay it down with the outside uppermost, pick up the pasted cloth, and lay it along the middle line made by the fold. Rub down the cloth, pick up the folio, re-fold it, and leave to set. Design and apply a pattern in stick-printing, and a panel of printing.

Book Jacket or Case for Papers (Fig. 4). *Material* Manilla paper or strong paper of good colour.

Fold to easy dimensions to fit the book or papers to be enclosed. Cut and fix cloth strengthener on back as in the above folio and carry out decoration in cut paper.

Luggage Labels (Figs. 5 and 6). Use manilla paper. Set out as shown in Fig. 6, Step one. Fold firmly along line *a*, then along line *b*. Punch hole with leather punch and fix a piece of string. Edges may be bound in cloth, as in Fig. 5, which shows a simple rectangle of manilla paper with the corners cut off.

LUGGAGE LABELS

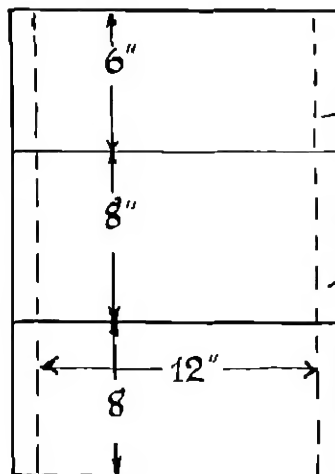
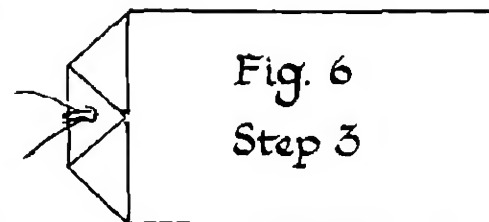
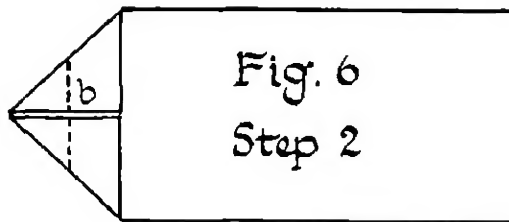
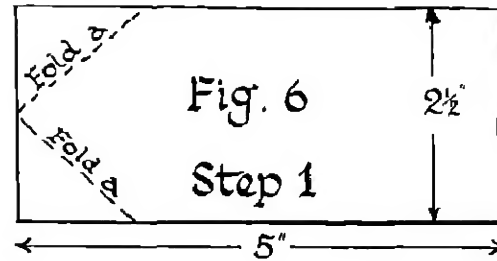
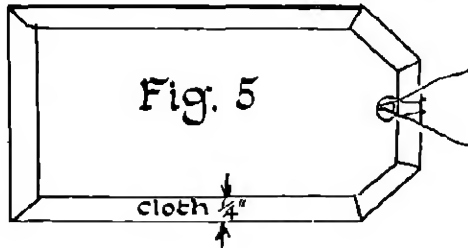


Fig. 7

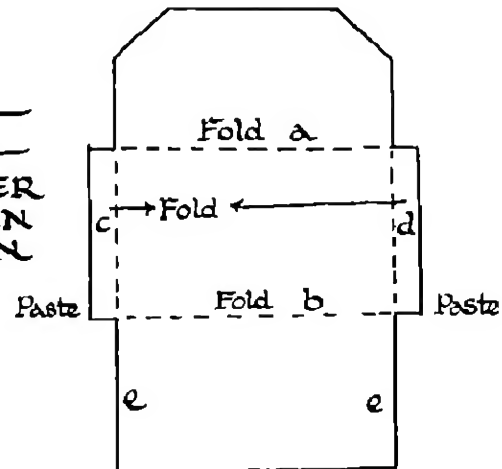


Fig. 7a

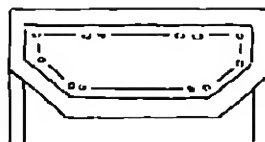


Fig. 7b

Envelopes (Figs. 7, 8, and 9). Brown or any other strong paper of suitable colour. Size as given in Fig. 7. Set out by folding; use width of ruler to obtain margins. Open out and cut as shown in Fig. 7a. Fold along lines *a* and *b*. Paste margins *c* and *d*. Fold over on to edges *ee*, and leave to set. Design decoration for panel of flap as in Fig. 7b. Note that the designs are so far to be made for various shapes.

Fig. 8 shows a simple form of envelope set out on a rectangle of strong paper, 21 in. by 12 in. Fold along *aa*, and bind the edges with 1 in. strips of cloth. Cut a decorative pattern of paper as shown in Fig. 9.

An Envelope with Two Compartments (Fig. 10). This is made from two pieces of manilla paper or other strong paper bound together with book-cloth up the sides and along the bottom edge (Fig. 10d).

Set out the larger piece *a* and fold along line *o*. Set out and cut the smaller piece. Fig. 10c shows the pieces in position for binding together. Prepare a long strip of cloth 1 in. wide and 28 in. long. This may, if desired, be prepared in three pieces, two pieces 8 in. long and the third piece 12 in. long. Fold the pieces of cloth down the middle, open them out, and paste the inside. Fix them to the edges of the envelope so as to bind them together, as in Fig. 10d. Design and apply the decoration for the flap.

Template Used for Envelope. Fig. 11 shows the use of a cardboard or thick paper template, when the problem of setting out is beyond the powers of the young child, while the hand-work is well within his grasp. Fig. 11, Step 1, shows the template in position; Step 2 shows the paper folded over lengthwise on the template. In Step 3 the top and bottom are folded firmly over. Step 4 shows the paper opened out, the lines which have been formed by the folding, and the parts which are to be cut away. In Step 5 the corners and flaps are cut out and the flaps ready for pasting. Step 6 shows the long flap pasted down; and Step 7, the bottom flap turned up and pasted, and the top flap turned down to finish.

A band of decoration in cut paper is shown in Step 8.

Book Jacket (Fig. 12). Set out a rectangular

piece of manilla paper as shown in Fig. 12, Step 1. Fold on dotted line as shown (see also Fig. 12, Step 2) and temporarily hold together with paper clips. Set out a line parallel to and $\frac{1}{4}$ in. away from each of the edges. Place the edge of the ruler along each of these lines and mark off with a pencil point spaces of $\frac{1}{4}$ in. or $\frac{5}{16}$ in. These points will be the centres of holes now to be made with the leather punch. These holes may be laced with narrow ribbon or cord, or thin leather thongs—see Step 3. In all details of this kind, the colour scheme must be carefully considered. For example, in this case cream or buff manilla paper would combine well with light green ribbon or brown leather thongs or ribbon, or a green and black cord. Another good scheme may be worked out in blue manilla, with brown edging of leather or ribbon. The decoration of this example may be carried out in cut and torn paper. Black paper is used for the background of the picture, in blue for the bowl, and black and orange and green for the impressionistic representation of flowers and foliage.

Envelope with Gussets (Fig. 13). The Sketch in Fig. 13 shows the finished form of a very useful type of envelope, which has a gusset fitted all round the sides and bottom. This adds to the capacity of the envelope.

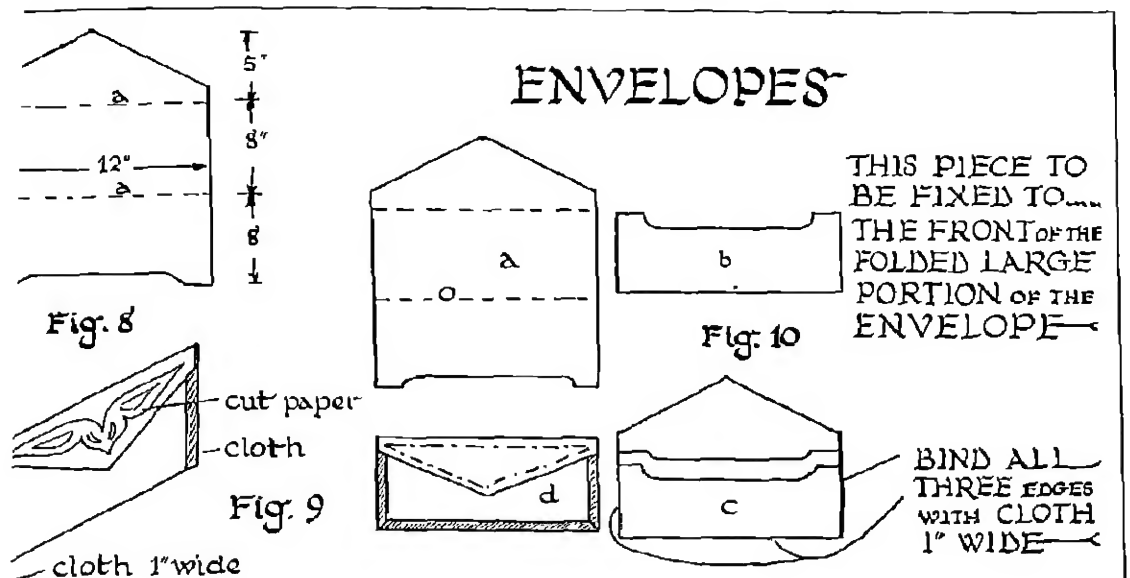
It is an idea which will be found to have a great variety of application in blotters and folios, inside the covers of books, in pocket books and wallets, and so on.

It is taken at this stage in a simple form, with little manipulative difficulty involved, and only two pieces of manilla paper to handle with the cloth.

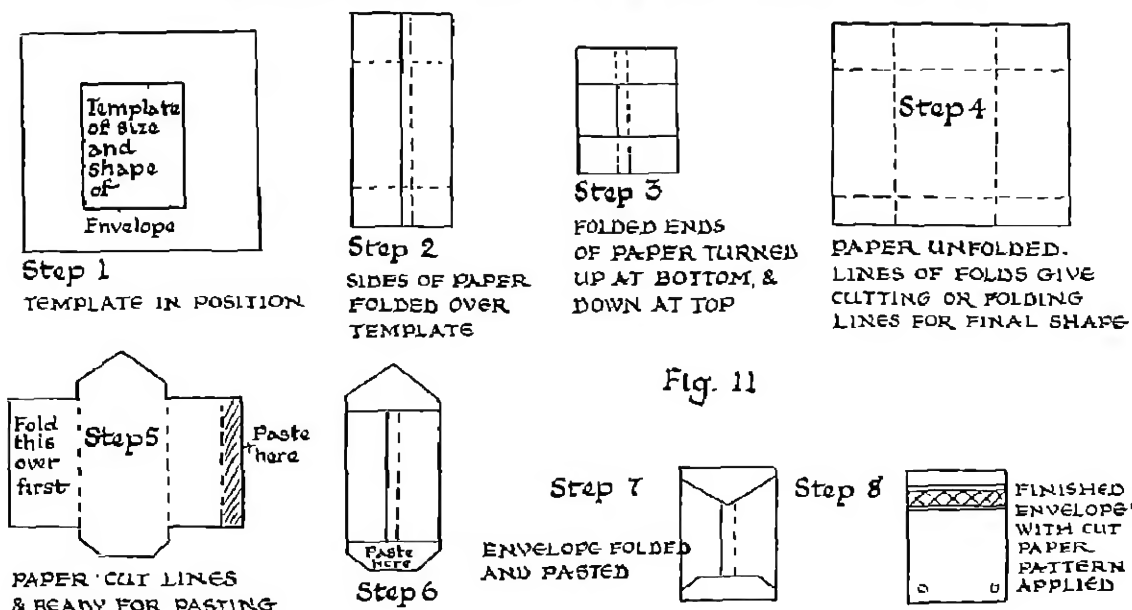
The setting out of the manilla paper is shown in Fig. 13 (Step 1). The setting out of the gusset is shown in Step 2. Cut a piece of cloth 2 in. or $2\frac{1}{4}$ in. wide, and fold down the length to give the spacings $\frac{1}{2}$ in., $\frac{3}{4}$ in., $\frac{3}{4}$ in., $\frac{1}{2}$ in.

Beginning at the left hand, measure off 7 in. At this point, draw or fold to form a line across the width as shown in Fig. 13. Measure off 12 in., the width of the envelope; fold or otherwise mark another line across the width of the cloth. Set out and cut a right-angled triangle in the cloth, as shown at the end of the cross lines.

Now take the length of cloth in the left hand,



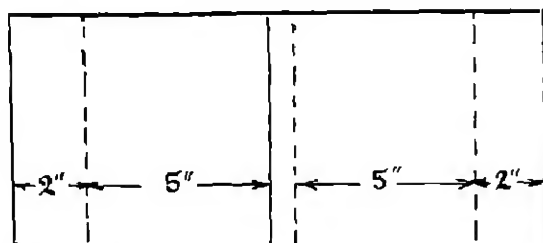
AIDS IN SETTING-OUT DEVELOPMENTS



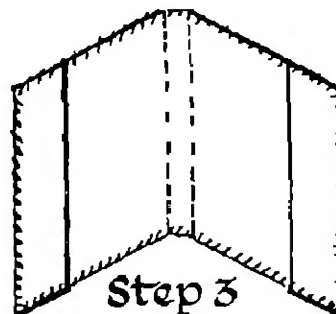
FIGS. 8-II

A BOOK JACKET OR COVER

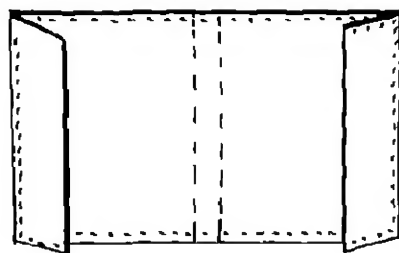
Fig. 12



Step 1

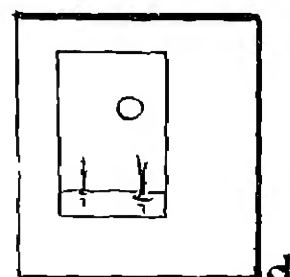
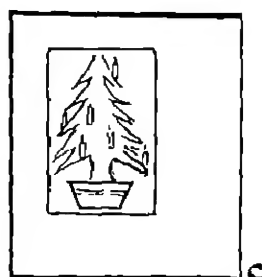
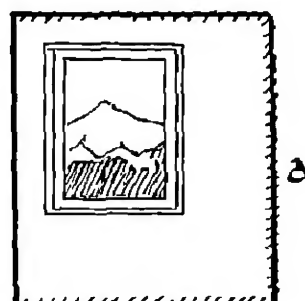


Step 3



Step 2

SETTING OUT THE HOLES
FOR THE THONGS

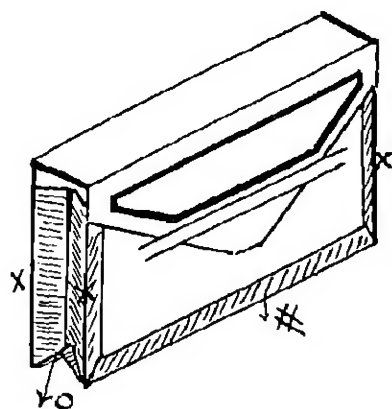


SUGGESTIONS FOR DECORATING THE
COVERS. THESE ARE IN CUT & TORN PAPER

FIG. 12

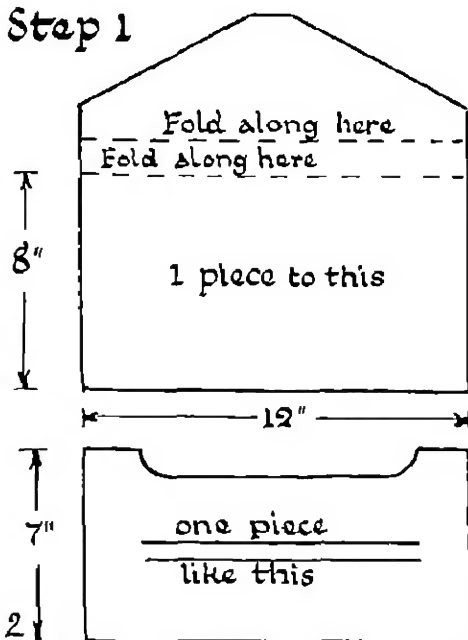
ENVELOPE WITH GUSSETS

Fig. 13

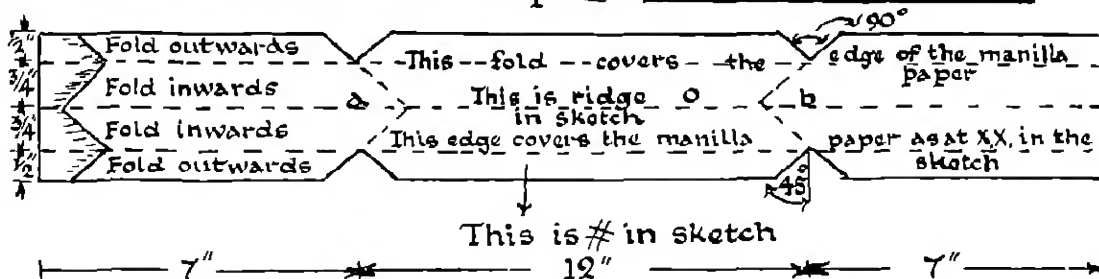


SKETCH OF
ENVELOPE

Step 1



SETTING OUT OF GUSSET Step 2



CARDBOARD MAY BE USED INSTEAD OF
MANILLA OR OTHER STRONG PAPER. A DOUBLE
GUSSET WITH TWO POCKETS MAY ALSO BE PUT IN

FIG. 13

holding it under the line *b*; lift the right-hand end up at right-angles to the long centre piece, then with the left forefinger and thumb pinch the centre piece to form the upward fold. At the same time with the right thumb and forefinger pinch the upright piece so that the fold turns inward. It will be found that the bottom end of this fold tends to sit on the angle of the upward fold in the long piece of the gusset—see Sketch at *O*. This is as it should be, and all that remains is to pinch the two parts at the right-angled corner to sharpen the fit of the upright part on to the horizontal part. Now go through the same operations for the other corner, and the gusset is ready to be pasted to the two pieces of the pocket. Step 2 shows how these pieces of manilla paper are pasted on the inside of the $\frac{1}{2}$ in. margin on each side of the gusset.

The Sketch shows the finished envelope with another method of fastening the flap. This is formed by cutting two long slits about $\frac{1}{2}$ in. or $\frac{3}{4}$ in. apart.

Calendars (Fig. 14) There is a great variety possible in the making of calendars. Wall-paper may be most effectively used both as a covering for the cardboard and as a background for any plain kind of decoration. A good deal of very pleasant colour work is done by using a plain or very simple and small-patterned paper as a background, and a piece of narrow frieze paper as a decoration line across the top, and perhaps the bottom, of the surface. The effect where such a piece of decoration is used is similar to that shown in Fig. 14*a*.

All the details on small articles of this kind should be correspondingly small. It is important to remember that most wall-papers are designed to cover large wall spaces, and where the pattern is large it is not very likely to fit very well a surface less than a square foot in area.

Strawboard and plain coloured papers may be used for small calendars. Cut the strawboard carefully to size, say, from 6 in. by 4 in. to 12 in. by 8 in.

An Ideal Shape. The rectangular shape is most pleasing for all these calendar-like articles. Some artists suggest that in an oblong with sides 5 in. by $8\frac{1}{2}$ in. will be found the ideal shape, or it may be an oblong with the short side three-fifths of the long side.

Fig. 14 shows an oblong 5 units by 3 units, and the method of obtaining smaller or longer rectangles is by drawing a diagonal and setting off the given length or width to cut the diagonal, and at the same time give the new width or length. Another method of obtaining a rectangular shape of pleasing proportion would be to decide on the width required, and then hold a piece of string or thread tightly in both hands, test it across the surface, and judge the proportion. Try out for lengths until the eye is satisfied.

Fig. 14, *a, b, c* show several designs carried out in coloured paper. The calendars should be of various shapes and sizes, so as to suggest variety in treatment of the space to be decorated.

Folios (Fig. 14, continued, page 1014) *a, b, c, d, e* give examples of a useful folio which may be made to open on the long side, as in *e*, or on the short side, as in the remainder of the examples. These are made to the size of the sheets of paper it is desired to file away, e.g. foolscap one-eighth imperial, or quarto size.

Operations (see Fig. 15). Cut the cardboard to size. Cut the covering paper with a $\frac{1}{4}$ in. margin all round. This paper should be selected with a thought for the colour scheme it is decided to carry out.

Paste the paper all over the wrong side, place the cardboard in the centre of the paper, rub well down to ensure that the paper adheres all over the surface of the card. Turn over the margins and rub them down. This forms the outer surface of the folio. Cover the inside with a panel of paper, leaving a margin of about $\frac{1}{8}$ in. all round. Repeat the operations to make the second side of the folio.

Prepare the design for the outside. Details of paper folding and cutting have already been given; Fig. 14, page 1014, also gives suggestions for colour schemes. It is quite unnecessary to make both sides of the folio alike. More practice in designing is given if they are decorated with different designs.

Cutting Mounts for Pictures

A good deal of useful work may be done in the making of simple cardboard mounts for small pictures, e.g. picture post cards. The operations necessary to produce the results

CALENDARS

AN
IDEAL
SHAPE

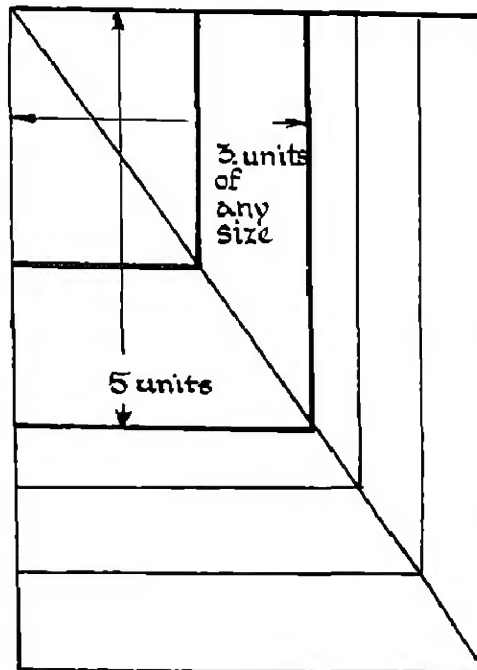


Fig. 14

NEW LENGTH
BY DRAWING
ON EXTENDED
DIAGONAL

NEW WIDTH

DECORATION OF CALENDARS using CUT PAPERS

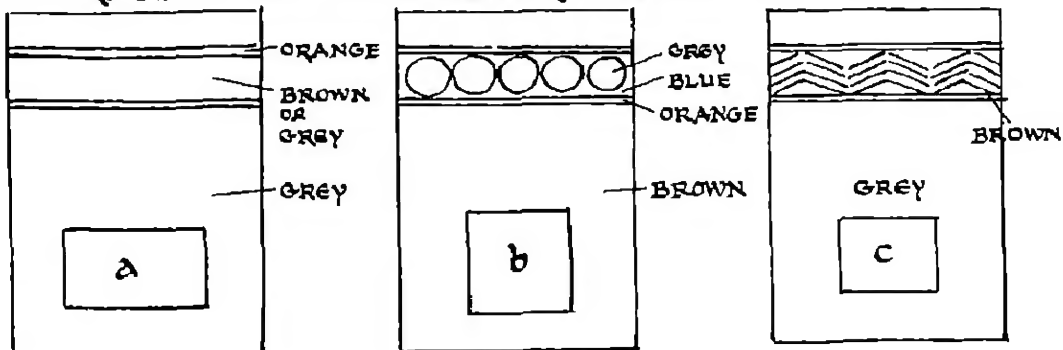
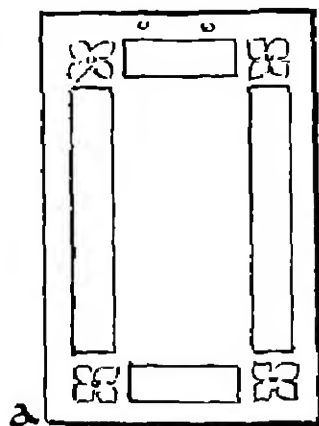
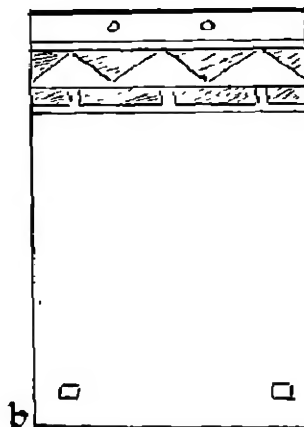


FIG. 14

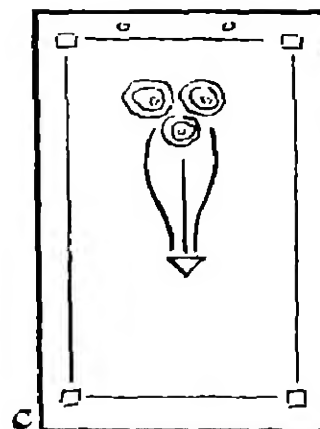
FOLIOS-AND THEIR DECORATION



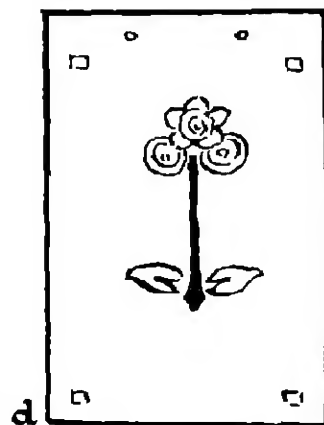
BROWN BACKGROUND,
ORANGE DECORATION



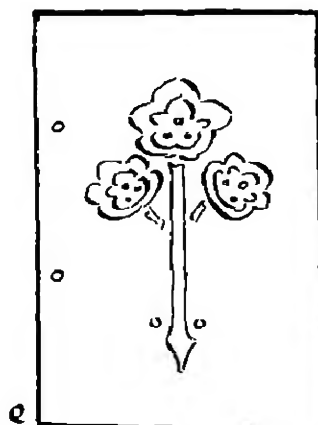
BROWN BACKGROUND,
GREEN CUT PAPER
DECORATION



GREY BACKGROUND,
FLOWERS EACH OF
THREEPIECES OF CUT
PAPER COLOURS, BLUE,
ORANGE, GREEN.

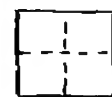


BLACK BACKGROUND
APPLIED PAPER
BLUE, ORANGE, GREEN

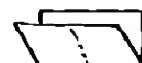


BLUE BACKGROUND
FLOWERS CUT IN TWO
SHADES ORANGE, ON RED
BLACK LINE

TO CUT THE FLOWER
EXAMPLE "A"



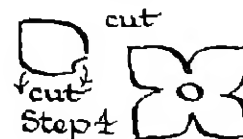
Step 1



Step 2



Step 3



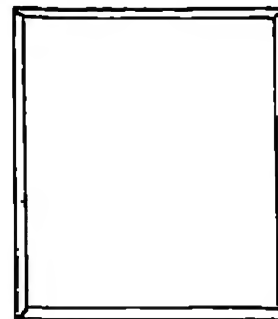
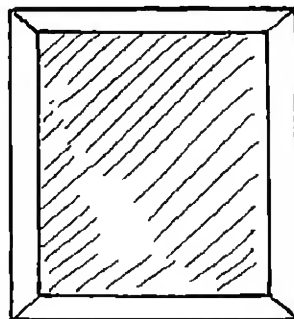
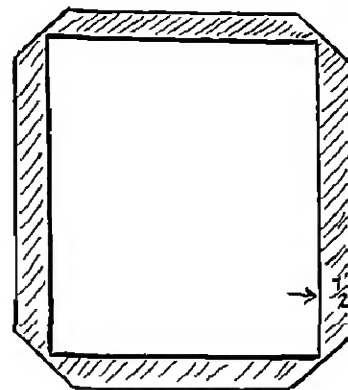
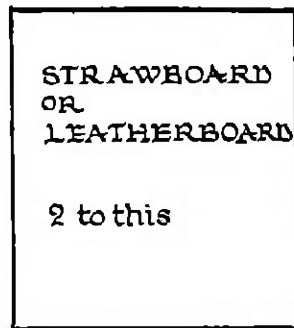
Step 4



Fig. 14
continued

FOLIOS-CONSTRUCTIONAL DETAILS

Fig. 15



MARGIN OF PAPER
COVER, FOLDED
OVER AND STUCK DOWN

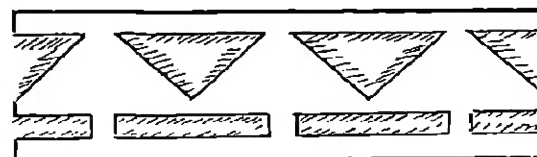
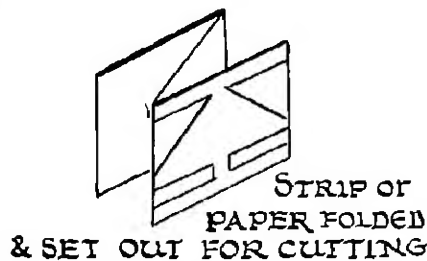
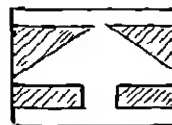


FIG. 15

merely involve a slightly different use of the knife and ruler, in a combination not before mentioned in this article. The non-slip rule has two bevelled sides, one steeper in slope than the other. In producing a bevelled or sloping side on the edge of a piece of cardboard, the edge of the rule having the lower angle of slope is placed about $\frac{1}{16}$ in. away from the line along which the cut is to be made to give the bevel on one outside edge. Now place the blade of the knife quite flat against the slope of the rule with the point on the line (Fig. 16, *b, c, d*). Draw the knife along, pressing the cutting point into the line and keeping the blade flat against the slope of the rule. Cut carefully until the point of the knife is through the card and the waste piece is cut away. A perfectly clean and smart bevel should result; if it does not, the probability is either that the knife point is not sharp, or that the point, when being placed in position at the beginning of the cut, was not placed exactly at the same slope and in the same groove as for the last cut. The other three edges are cut in a similar manner.

The Inside Bevel. To cut out the piece which is to receive the picture, set out with a pencil the rectangle $\frac{1}{8}$ in. larger than the exposed part of the picture each way. The piece to be cut out is dealt with in exactly the same way as the outer edges (Fig. 16*c*). Special attention must be paid to the inside corners of this rectangle, so that they may be cut square and clean and at the correct bevel, and make an accurate mitre line in the corner. A little patience must be exercised in order that the central piece may be cut clean out without leaving any ragged edge.

It will be found that if a piece of cardboard is used as a cutting board, the point of the knife, as it passes through the card being cut, will not be dragged out of line, as it might be by a wood or zinc cutting board.

Surfacing the Cardboard Interesting colour can be put into the edges of the mount if the piece of cardboard being used is faced with a piece of thin coloured card or manilla paper. When cut, the edge will show two colours. If the back of the cardboard is also covered in the same way, another line of colour is introduced into the bevelled edges.

It will always be found that little extras of

this kind help very considerably to develop in the mind of the child a keener appreciation of the value of critical thought on a problem, in order to find out whether an improvement can be made on the result.

Albums and Notebook

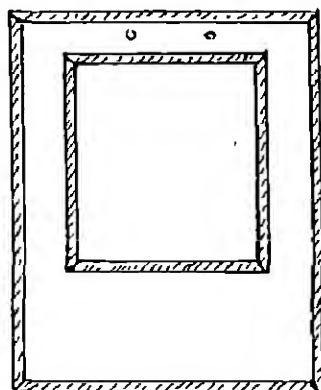
Fig. 17 shows the method of constructing a simple form of album, which follows easily in sequence the folio in Fig. 15. The component parts are shown in Fig. 17*a*. Two pieces of cardboard, the narrow piece 1 in. wide, the length and width of the larger piece according to requirements, are cut and placed, as shown, on a piece of bookbinder's cloth. The latter is cut to shape, pasted and turned in top, bottom, and side as shown in *b*, which also shows the method of obtaining the shape of the paper which is used for covering the rest of the cardboard. Two of these are made, and holes are punched as shown in *c*. The leaves of the album are made as shown in *d*. The reason for folding the leaves is that it is necessary to provide some additional thickness on the back of the album, so as to balance the thickness of the inserted photographs, etc., and so keep the pages level in thickness. Holes are punched in the leaves to register or correspond with those in the cover. Leaves and covers are then laced together with a cord.

Notebook Case (Fig. 18). Fig. 18 gives details of a useful notebook case. The new construction in this exercise consists of the fixing together of two pieces of cardboard to form one kind of book back. The sizes of the parts are given. The distance between the two pieces of cardboard depends upon the thickness of the book to be made and inserted. A space of about 1 in. will probably be right. Details of make-up are given on the drawings.

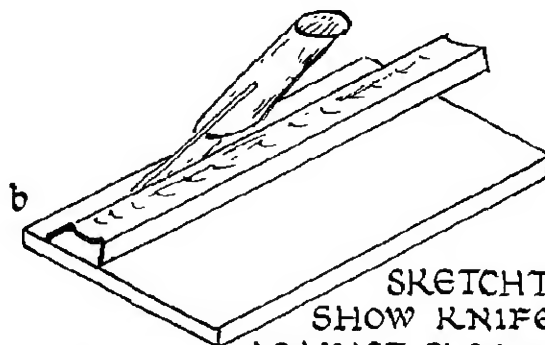
A Five-piece Album (Fig. 19). This album is a very serviceable piece of work. The operations involved in the making are nearly all contained in Figs. 17 and 18. The additional work is found in the insertion of the middle narrow piece to form the back of the album. The cover papers of this album afford good scope for decoration in pen and ink or colour, or they may be made of hand-coloured or lino-printed papers

CUTTING MOUNTS FOR PICTURES

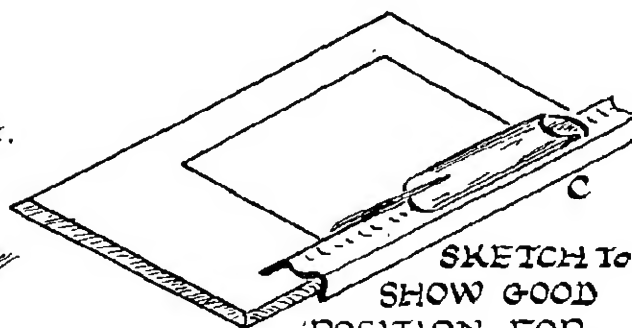
Fig. 16



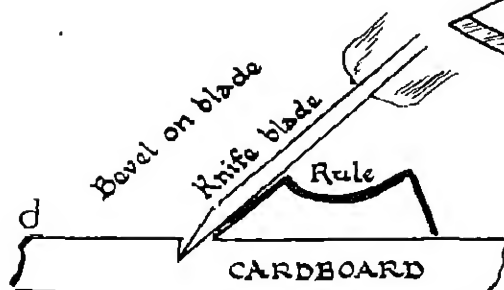
THE FINISHED MOUNT OF STRWBOARD FACED AND BACKED WITH MANILLA, OR OTHER THICK COLOURED PAPER, OR THIN CARD; AND SHOWING A THREE COLOURED EDGE.



SKETCH TO SHOW KNIFE AGAINST SLOPING SIDE OF NON-SLIP RULE, SO OBTAINING BEVEL OR SLOPE ON EDGE OF MOUNT.



SKETCH TO SHOW GOOD POSITION FOR NON-SLIP RULE WHEN CUTTING INSIDE BEVEL, CUT EACH SIDE IN TURN, AND THEN CONCENTRATE ON CORNERS.

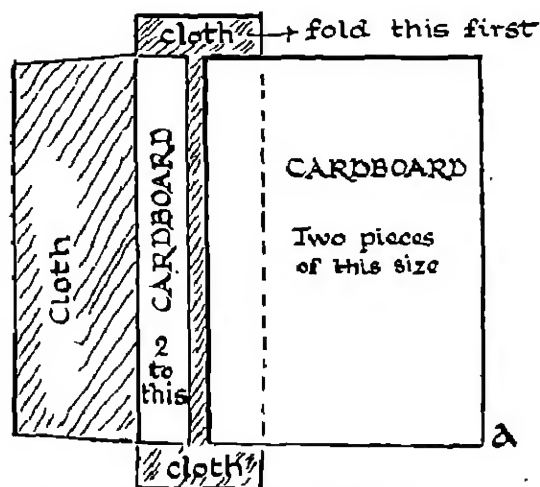


ENLARGED SKETCH TO SHOW BEVEL ON BLADE ON OUTSIDE OF RULER

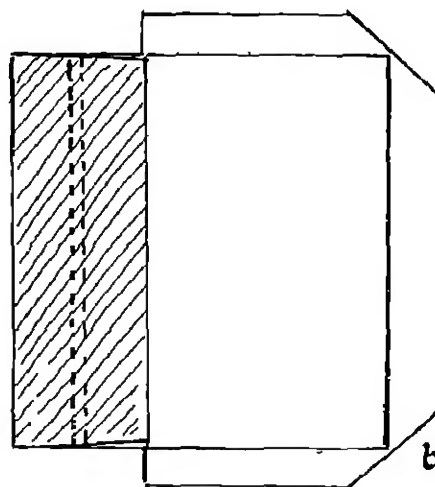
FIG. 16

A SIMPLE ALBUM THE CONSTRUCTION-

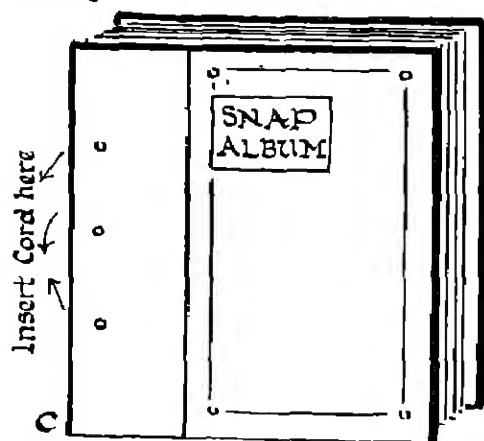
Fig. 17



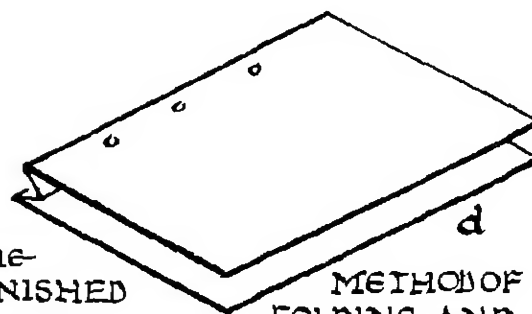
SKETCH SHOWS CARDBOARD IN POSITION ON CLOTH WHICH IS CUT AND READY TO FOLD OVER



CLOTH FOLDED OVER, PASTED DOWN, AND PAPER COVER READY TO PASTE—



THE FINISHED ALBUM, WITH LEAVES INSERTED

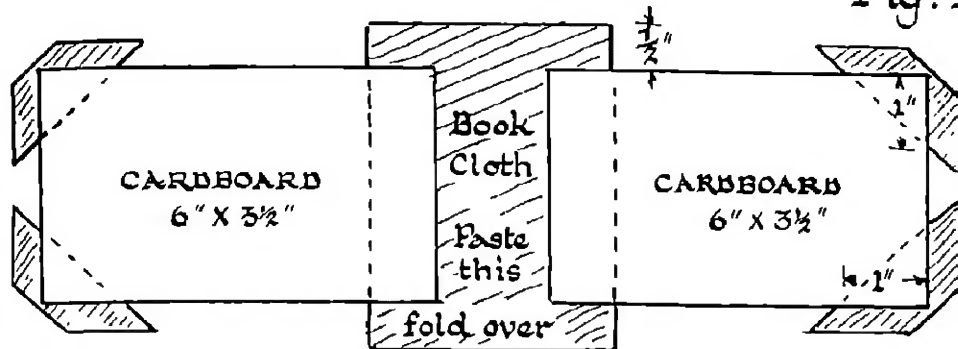


METHOD OF FOLDING AND PUNCHING LEAVES

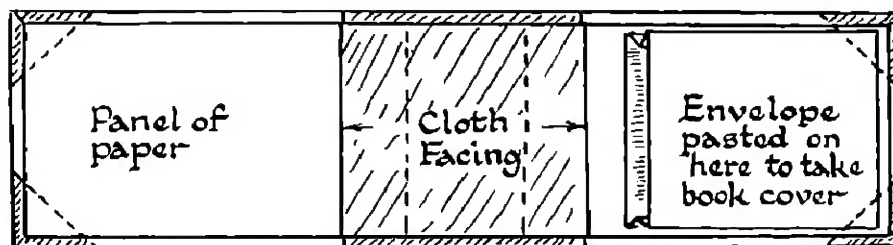
FIG. 17

NOTE BOOK CASE

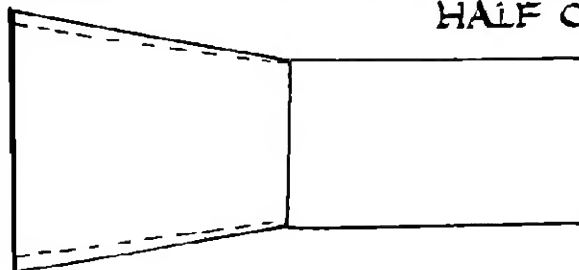
Fig. 18



THIS SHOWS THE LAY-OUT OF THE CARDBOARD AND CLOTH BACK AND CORNERS



VIEW OF THE INSIDE OF THE CASE SHOWING CLOTH TURNED IN, FACED UP, CORNERS FIXED, PAPER PANEL TO FINISH THE INSIDE OF EACH HALF OF THE CASE



DEVELOPMENT OF ENVELOPE

FIG. 18

The Making of Blotters

Blotting pads of useful size provide good scope for variety in construction. The operations involved in the making can be kept simple or made more complex according to the capabilities of the particular child. It is good educational practice to teach the children how to analyse the construction of several examples of this class of article. Anything that has been built up can, as a rule, be analysed and broken down and reconstructed. Such work leads quite definitely to an understanding of the values of articles of this kind. One point should be pressed home, namely, that the foundation of these problems must be solid.

The main weakness in the making up of large pieces of cardboard lies in the fact that thin cardboard is used. Warping often takes place; the result is not pleasant to look upon. This can be avoided if two or three thicknesses of card are stuck together to make up a solid board. If each piece is cut carefully to size, when the two or three pieces are stuck together they should fit accurately; and so the need for cutting a thick piece of board with a knife, a task beyond the physical powers of the Junior child, does not arise.

Fig. 20 shows details of the making of a simple form of blotter. The size of this depends entirely upon use, whether it is to fit a small table and small sheets of paper, or must be of a size useful on a desk, with plenty of room to work in and work to be done on it. And the larger the size, the thicker the cardboard up to a limit of three thicknesses of "one pound" board.

The illustrations show—

1. The cardboard cut and ready for covering with the cut paper. The corners of the latter are cut so as to form a mitre when the margins are turned over the edges. The corners are now to be covered with cloth, which is to receive two or three or more sheets of blotting paper. The cloth corners are made by cutting a square, as shown in—
2. Fold it and stick the two halves together, as in—
3. Cut the corner off, as in—
4. Sufficiently large to give a margin of about $\frac{3}{4}$ in. when turned over the edge. Apply paste

only to the margins to be turned over. Place the cloth corner in position, but, before doing so, put down a piece of cardboard as shown, so that when the cloth is pasted in position there is a space left by the withdrawing of the cardboard which will allow for the insertion of the blotting paper. The sketch—

5. Shows the underside of the cloth corner; and—

6. Is a sketch of the finished blotter with blotting paper inserted.

Fig. 20, 7, shows the lay-out of a blotter which is a little more complicated, but in actual construction does not contain any operation which has not been done in detail in previous examples. Sizes for a large and serviceable desk blotter would be 18 in. by 12 in. for the centre piece which forms the base. The steps in the construction are—

1. Cut cardboard and cloth as in Fig. 20, 1, and stick together.
2. Face up cloth inside and fix corners on outside.
3. Cover outside with paper, turning over the edges on to the inside, panel the inside with paper.
4. Make blotter as in Fig. 20, 6, and stick down. Place under pressure to set and dry.

For the folding blotter shown in Fig. 21, page 1025, make gusseted pockets as in Fig. 13, using thin cardboard instead of manilla paper, and bind top edge with cloth to match margin on gussets. The pockets should be lined with paper by covering the piece of cardboard before they are made up. Attach pockets by pasting down in position shown. The front of the pocket is panelled in paper.

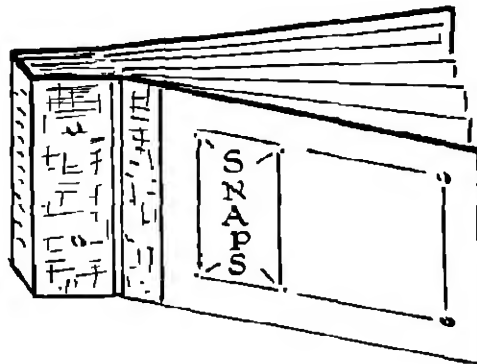
All these examples may be covered in marbled, paste-colour, or oil-coloured papers, to match the cloth used in the construction. Or, if a plain paper is used, stencilling, broad-nibbed pens, water-colour, or block-printing, lino-stamping, or any other method or media may be adopted in the decoration of the covers.

Another Type of Folio

Fig. 22, *a* and *b*, *c* and *d*, show how to make a folio with flaps, a very useful form for storing drawings, etc., and for standing upright on the book shelves. Fig. 22*a*, shows the general

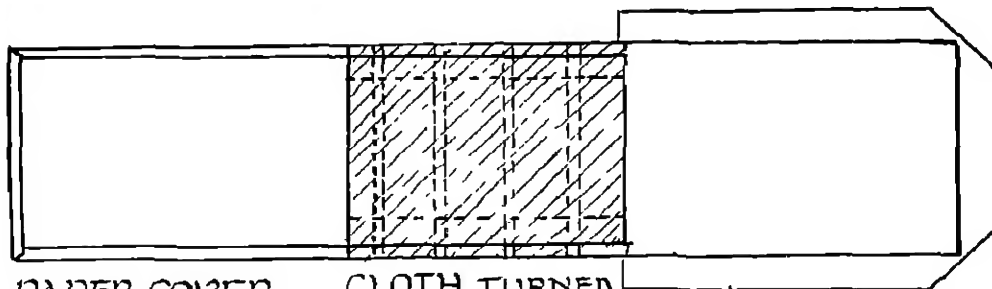
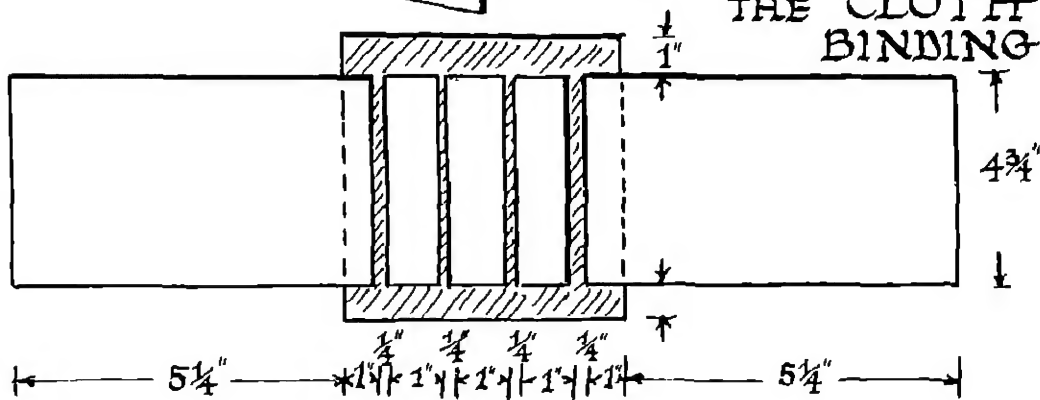
A FIVE PIECE ALBUM

Fig. 19



SKETCH OF
FINISHED...
ALBUM...

PLAN OF SETTING-
OUT OF PIECES ON
THE CLOTH
BINDING



PAPER COVER
TURNED OVER,
EDGES AND
PANEL OF PAPER FIXED

CLOTH TURNED
IN AND FACED UP
WITH CLOTH
FIXED

PAPER COVER CUT
AND READY FOR FIXING
AND TURNING IN...

FIG. 19

lay-out of the pieces of card of which the folio is made. It is always advisable when preparing the parts of any apparently complex piece of work to lay them out in the position they will ultimately occupy when fixed together, so that the number of pieces and their sizes may be checked. This plan also helps the worker to obtain the sizes of the pieces of cloth required to bind all together.

It will be observed in *b* that the flaps are entirely covered in cloth. This is done in order to simplify the covering, and to produce a neater and better finished result than could be done if the attempt were made to economize on cloth, by panelling in paper, on this small piece. The four illustrations show the order of

the steps in making the folio, and this order should be carefully followed. They may be briefly summarized thus—

1. Fig. 22, cut and set out pieces of card-board.

2. Prepare and fix cloth for side flap and middle hinge, as in *b*.

3. Prepare and fix cloth for top and bottom flaps, as in *c* and *d*.

4. Fix the tapes by cutting slots as shown, passing the end of each tape through the board and pasting down. Panel the inside of the flaps in cloth, cover the outside of the left-hand and centre boards; panel the inside of the two boards, all in paper or in another coloured cloth (see *c* and *d*).

COLOURED PAPERS

A good deal of extremely interesting and useful experimental work can be done in the production of coloured papers of various kinds. Coloured waterproof inks, water-colours, oil colours, printers' ink, lino-printing colours, and poster colours can all be used in one way or another to produce decorated papers which can be used in covering books, as end papers, panel papers, and for construction work.

The use of such home-printed papers enhances the value of the work in respect of colour training and distinctiveness in the surface decoration and finish of the articles made. It also gives scope for experiment.

Paste-colour Papers

To produce these coloured papers, take a sheet of drawing paper, or any similar unglazed paper, and pin it to a drawing board or a table top. Paint the surface with water, applied with a clean brush. Put out on to a palette, a dish, or a saucer, a little tube water-colour. Prepare two or three dishes in this way with different colours. Thin the colours a little with water.

Make a thin mixture of starch paste and water, or thin down with water any white paste. Now paint the wet surface of the paper with the thin paste. The next step is to dab the wet,

pasted paper here and there, or in lines, with a little of each of the two or three colours. The final effect due to the merging of these colours is then obtained by using a brush, large or small, with a dabbing action, or the brush is applied with a twisting movement given to a number of strokes moving across or down the sheet of paper. Again, keeping the brush in contact with the paper, work across or downward with a wavy motion. Experiment in this way until satisfied with the appearance of the pattern. The advantage of first wetting the surface of the paper with water is that the paste and colour are kept fluid and workable until satisfaction is obtained. If the surface is not so wetted, the paste dries, and the colour very quickly sets and ceases to be movable under the brush.

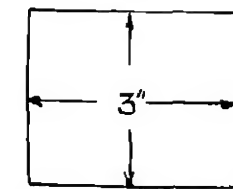
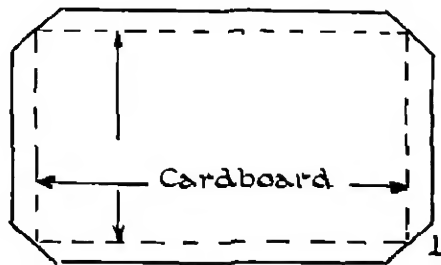
Another method of producing pattern and texture in the surface of colour is by use of a small sponge. If this is dabbed, or applied with a dab and a twist of the wrist, a texture is produced which is quite different from that which the brush makes.

Plain coloured papers of various tints may be used to obtain different effects from the background to the applied colours. Grey paper will be found a most useful colour, and when blue and green water-colours are applied some delightful effects can be obtained.

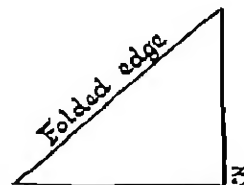
BLOTTERS DETAILS OF CONSTRUCTION

SINGLE PIECE BLOTTER

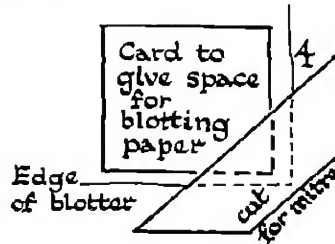
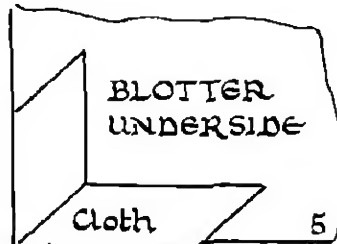
Fig. 20



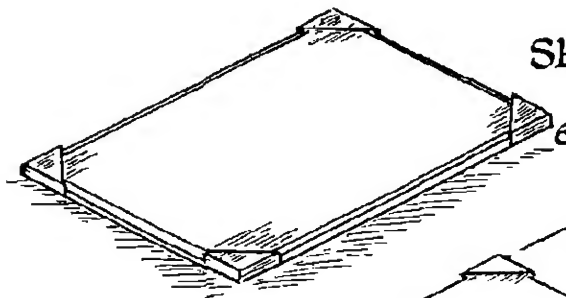
CLOTH for CORNER



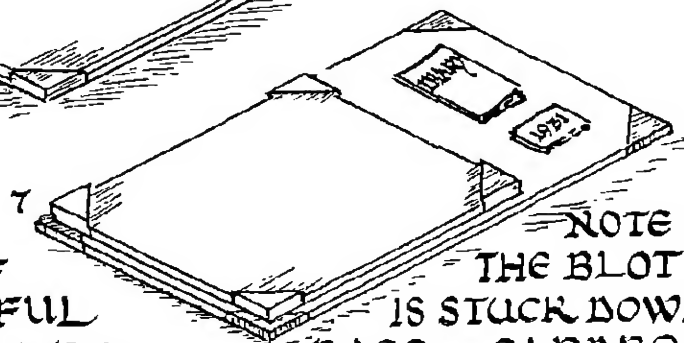
PASTED & FOLDED



CLOTH IN PLACE READY FOR MARGINS TO BE TURNED OVER



SKETCH OF FINISHED BLOTTER



SKETCH OF MORE USEFUL DESK BLOTTER

NOTE THAT THE BLOTTER IS STUCK DOWN TO A BASE OF CARDBOARD.

FIG. 20

Waterproof Inks

Very beautiful and delicately coloured papers can be produced by the use of coloured waterproof inks, such as are sold by the various colour merchants. The method of working is as follows: Prepare a bowl of water, and sheets of plain unglazed paper, thin cartridge or similar quality, not too large for the bowl. Open two bottles of ink of harmonizing colour, say, blue and orange. Take two or three thin metal rods of any kind, e.g. meat skewers or knitting needles. Dip the rod into the ink, lift out a small quantity of ink, dip the rod into the bowl, so transferring the ink to the water. Dip into another colour with another rod and transfer this colour to the water. It may be necessary for a large surface to dip each rod twice or three times into the inks before a sufficient amount of colour has been put into the water.

It will be found on careful examination that the ink is moving on the surface of the water in a wavy formation. If one colour predominates or is standing in comparatively large masses, it should be carefully broken up by moving the point of a rod through it. This also brings the other colour into it in wavy form. When any large masses have been broken up and a general waviness of colour is observed on the surface, take up a sheet of paper, holding it by opposite corners, and place it carefully on the surface of the water, lowering it on to the water from one corner to the other. Keep the paper in contact with the colour for a moment or two and then lift out. A delicately coloured pattern should be printed on the surface of the paper. Observe it carefully, and note whether the masses of colour were sufficiently broken up, the colour properly spread over the surface of the water, the waviness has sufficient movement, the influence of the colour of the background on the colours used is good, and so on.

It will be found that some colours of ink are no use on certain colours of papers, and that cream-coloured paper is extremely useful.

Think carefully on the results; do not go on blindly and thoughtlessly repeating failures, or much time and material will be wasted, and the children will not learn much from the experiments.

Fresh application of colour must be made for each sheet of paper to be printed, but with the same colour scheme patterns can be produced which will match one another quite well.

It should be remembered that the operations of putting in the ink and printing take much less time than it takes to write this description. No time should be lost in carrying out the operations, or it will be found that all the ink has gone to colour the water and is wasted. It is well to change the water fairly frequently, so that the colour schemes are kept fresh.

This method uses a very small quantity of ink, and is quite inexpensive and effective.

Oil Colours

If oil colours of any kind are thinned down with paraffin or turpentine and used as described for waterproof inks, very delightful marbled papers of a more vigorous character can be produced. Lino-printing inks, printers' inks, artists' oil colours, poster colours, or ordinary oil paints as used by the house decorator, may all be used with good effect.

Take a small quantity of one or two colours; thin them down with paraffin or turpentine in a saucer or dish of any kind. Prepare the sheets of paper it is desired to colour, and a bowl or dish of water large enough to take them. With a brush transfer a little of one colour to the water. If it sinks to the bottom, add more paraffin or turpentine. It should float on top of the water. Now add the other colour, testing it for floating, and thinning down still more if necessary.

Move these two colours about very carefully with a rod of any kind to secure a wavy pattern in colour. Do not move the paint about at all quickly, or it will not be possible to obtain effects "on purpose" - pattern will be changing too rapidly to catch in the printing.

This colour can be dealt with more deliberately than waterproof inks, as the pattern on the surface of the water does not disappear so quickly.

Apply the sheets of paper in the way described for waterproof inks, lift out, and leave to dry. It is sometimes possible to obtain a second print from one floating of colour. A wavy effect of

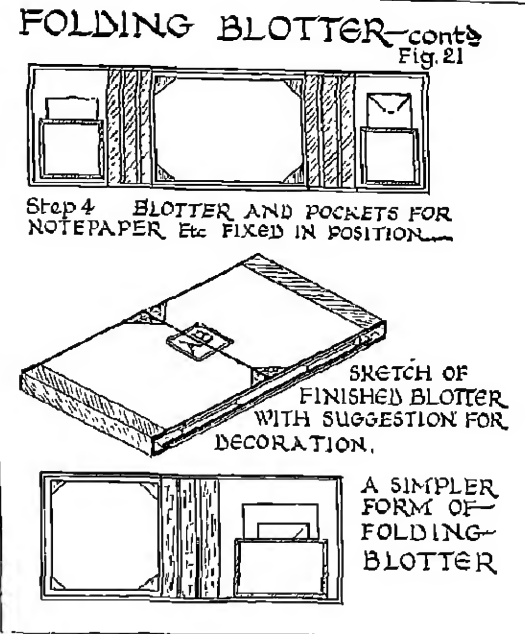
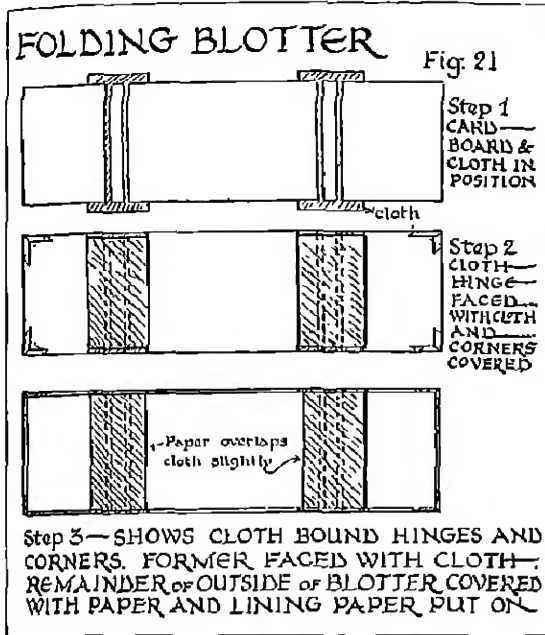


FIG. 21

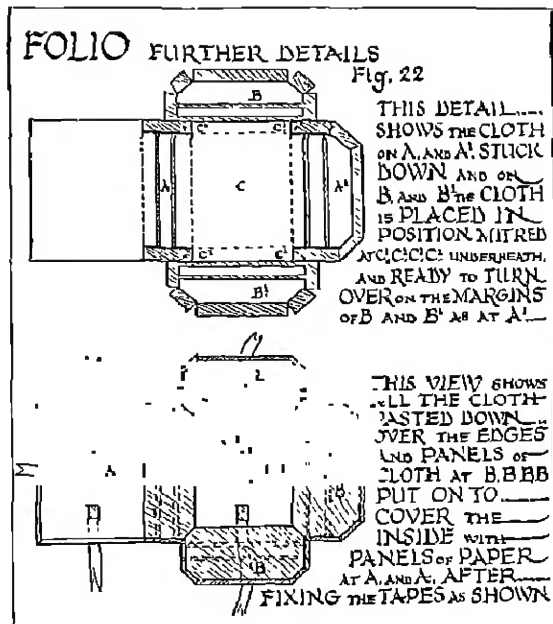
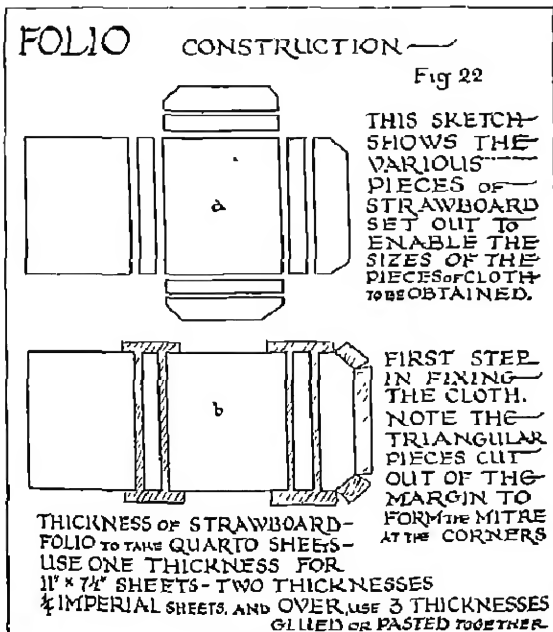


FIG. 22

colour running straight across the sheet of paper can be produced by plunging the paper into the water edge first, through the film of colour, pulling it out on the opposite side of the bowl, so that all the paper passes through the colour.

Oil Colour on Glue Size

Another method of producing oil-coloured paper is by using, instead of water, a very thin size made by mixing, say, about 2 oz. of glue with $\frac{1}{2}$ pt. of hot water. When liquid, this size is mixed with 2 or 3 pt. of cold water and left to settle to a very thin jelly, which is practically fluid. The size is best put out into a shallow dish, say, about an inch deep, and large enough to take the sheets of paper it is required to print. If small sheets only are required,

the quantity of glue, etc., must be reduced accordingly.

The surface of the size in the tin may require skinning. This can be done by drawing through it a piece of paper or cardboard.

The oil colour is placed on the surface as described above. It should float on top, and the advantage of the use of size is that, the latter not being so easily moved as water, the pattern in the colour can be moved around more deliberately and can be made to take special form more easily. Another advantage lies in the fact that, after each printing, the colour remaining can be cleared off by drawing pieces of stiff paper through the size.

Various shaped combs with which to comb the surface of the colour into pattern can be made from cardboard or match-sticks, pins, or nails.

PREPARATION OF HISTORY CHARTS

The cutting out and mounting of the pictures to be used in History charts similar to those presented with this volume will provide good practice with scissors, knife, and paste.

In assembling the material for these charts it is well to keep an eye on the proportion of the several parts, so that the whole chart may present as pleasing a picture as is possible in the circumstances. The preparation of PRACTICAL JUNIOR TEACHER History charts has necessarily been rather limited by the comparatively small scale; but if larger charts are modelled on these there is a very wide scope for the production of helpful and attractive pictorial summaries, and there is no doubt that these give invaluable assistance to the children.

A suitable coloured paper should be used to cover the sheet of strawboard which is to form the background to the cut-out pictures. A good

quality paper of grey, greyish brown, or greyish blue colour will be found quite safe.

To obtain a perfectly smooth surface, damp the surface of the paper carefully with a wet sponge, and spread the paste, quite evenly, on the strawboard. Lay on the paper, rub it down quite flat, and then place under flat pressure for several hours. Trim the edges when quite dry, and bind with strips of cloth to form a frame to the chart, other PRACTICAL JUNIOR TEACHER charts may with advantage be similarly mounted if they are to be kept on the classroom walls.

Further value is given to such work if the painting of their own pictures, to illustrate their researches in an "activity," leads to the pupils mounting such chart material during the Art and Handwork lesson. This involves, of course, co-operation among the staff; but this is in any case essential for modern teaching methods.

SIMPLE BOOKBINDING

THE aim of this section is to provide a varied scheme of very elementary bookbinding such as can be confidently recommended for Junior Schools. There are limitations to certain sections of bookbinding which make it impracticable for children in Junior Schools to carry out the whole of the operations in binding a large book. For example, the sewing on tapes of a fairly thick book is *not* beyond the scope of a ten-year-old child, but the cutting of the edges of such a book may be physically beyond the child's powers. It may be argued that the book should be stitched so carefully and regularly that cutting is unnecessary. That can be done, and then it may still be found that the handling of the book in order to round and glue the back and fix the cloth is also too difficult for the young child.

These points are mentioned at the outset in order that it may be realized that there are decided limitations to the size and difficulty of the bookbinding which can be done by Junior children. It is well that this should be recognized, or it may be found that much of the work involved in the binding of heavy books will need to be done by the teacher. If tools or other aids can be devised which will enable the child to do this work, all is well. If such aids cannot be contrived then the problem must be either simplified or dropped out of the scheme of work.

Single-Section Book

The binding of single sections begins with the small greeting card made by the Infant who tears two pieces of coloured paper to a rectangular shape, and, piercing two holes through them, threads a piece of wool, raffia, or string through the holes and then ties the ends in a knot on the outside.

It will probably be found that a number of single-section books will be required by the children in the Junior School. It is therefore desirable that a good variety of methods of building up and finishing should be adopted so

that interest may be sustained and wide experience gained. The first book may be made from foolscap paper, plain, squared, or ruled, and the size may be equal to one-eighth of the size of the single or double foolscap sheets. To obtain this, tear the sheet carefully in two and fold each half twice. This will give two sections of a book. Make these into one section by placing one inside the other. If there are not sufficient leaves in this book, fold another half sheet and place it inside the other two. This will make up twelve leaves, but two of these will be used as end papers, so the book will contain ten leaves. See Fig. 1, *a*, *b*, *c*, and *d*.

It is not wise to make these small single-section books too thick. A bulky small book is neither easy to sew nor pleasant to handle when finished.

Sew the sections together with two stitches, as shown in Fig. 1*e*, tying the knot inside. Open the book at the middle and lay it face down on a piece of clean waste paper (*f*). Cut a piece of stiff coloured paper the same size as the opened book. Paste the back of the book carefully as in Fig. 1*f*, do not leave any lumps of paste. The latter may not always be avoided when using a brush, but it is a simple matter to spread the paste perfectly if a piece of cardboard with a straight edge is used as a spreader.

Having spread the paste, lay on the outer cover (Fig. 1*g*), rub carefully to exclude all air bubbles, fold, and place the book under light pressure to dry and set. The wet book should never be put into a vice or any press and subjected to heavy pressure.

Next day, set out carefully for cutting the front edge, as shown in Fig. 2*a* (1-2). When this is cut, set out with a set-square the top and bottom edges of the book, or, more correctly, the "head" and "tail" (Fig. 2*b*).

The point of the knife cannot be too sharp for this work, and a sharpener in the form of a piece of wood with a strip of emery cloth glued on its surface (Fig. 2*c*) is a very useful tool which should be in constant use (see page 1131).

The outside front of this book may be decorated, as shown, with a little paper cutting. Fig. 2, *d* and *e*, and Fig. 3 show suggestions which can be carried out quite easily by folding and cutting. The size and shape of this book may be varied according to the use to which it is to be put.

A Simple Album

A second form of book, a little larger in size, with fewer pages, for use as a store for leaves, flowers, etc., may be made from manilla or other stiff paper.

Any book which is to be used as a store for anything of this kind (also for cards, films, snapshots, etc.) must have the back thickened up in some way to allow for the thickness of the inserted leaves, etc. If this were not done the pages would be filled out at the front edges and be permanently open. Fig. 4*a* shows how this is done. It may also be done as shown in Fig. 4*b*, where the sheets are not double-page size, but a page and about $\frac{3}{4}$ in. The fold occurs on the line $\frac{3}{4}$ in. from one edge.

The cover may be put on in thick paper or in manilla and the back strengthened with a strip of bookbinders' cloth, as shown in Fig. 4*d*. The back of any single-section book may be strengthened by the addition of pieces of tape and book muslin. The tapes are passed through the loops of thread in the back formed by the stitching of the section. They are pasted down to the outer leaves of the book (Fig. 5*a*). The muslin is then pasted on to the back fold so as to cover the tapes and stitches (Fig. 5*b*). The book is then left to dry, after which it may be covered with manilla or other stiff paper as described for Fig. 1*g*.

Another method of fixing the muslin is to sew it in with the sheets of the section. This is done either with or without tapes (Fig. 5, *c* and *d*). Ordinary bookcloth may be unnecessarily strong for small books with paper or limp cloth covers.

A stronger cover may be obtained if, instead of using either manilla or other strong paper, bookbinders' cloth is used to cover the whole book. It is so easy to spoil bookcloth when paste is being used on it, that great care must be

taken. In this case it would be best to paste the back of the book as previously described. There is great temptation to paste the cloth, and the danger lies in laying on so much paste that the cloth is soaked through and spoiled, or in taking so much time over the operation that the cloth begins to curl and is most difficult to control. Cheap bookbinders' cloth is very difficult to use in this way, and it is best to avoid it if possible. For practice work duxecen is very good material, and is most useful in this early full binding.

The Decoration of Books

In the previous section on Paper and Card-board work the fact was stressed that the hand-work and art must be closely correlated. The same principle is applicable in this section too. The surface of a book cover, of an end paper, and of a fly leaf affords plenty of scope for good work in design. This can be carried out in various media, e.g. cut and torn paper, stickprinting, lino printing, and stencil work.

Much good work is spoilt in the finishing steps by poor printing. This matter needs some attention, because the teaching of form, proportion, and spacing of lettering to young children is by no means easy. Some compromise regarding form is necessary, and we have found the use of squared paper quite effective in training young children to appreciate at any rate a little of what is meant by good lettering. Fig. 6 gives proposals for letters of various proportions in capital letters. These are drafted on the squared paper and then transferred to a piece of plain paper of the colour required to harmonize with the scheme of the cover. This transfer is easily effected by rubbing the back of the squared paper on which the title is printed with soft lead pencil, completely covering the back of the printing. Place the squared paper carefully in position on the coloured paper on which the printing is to be done and pin it down. Trace over the printing with a hard pencil. By means of the soft lead on the back, the outline will be transferred to the coloured paper. Having thus obtained good form in the lettering, colour or ink it in as desired.

If the paper on which the printing is to be done

FIRST SINGLE-SECTION BOOK FOLDING THE SHEET

Fig. 1

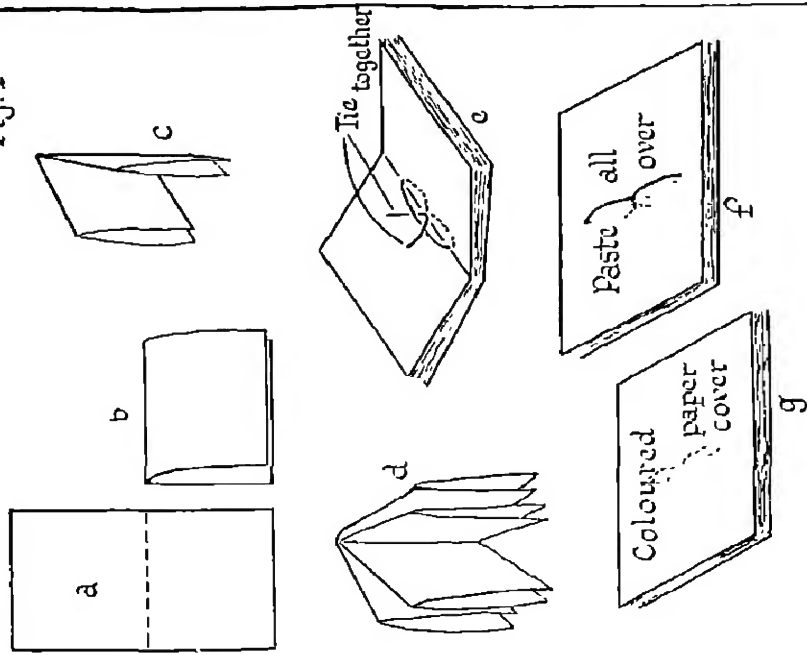


FIG. 1

SETTING-OUT, CUTTING & DECORATING COVERS

Fig. 2.

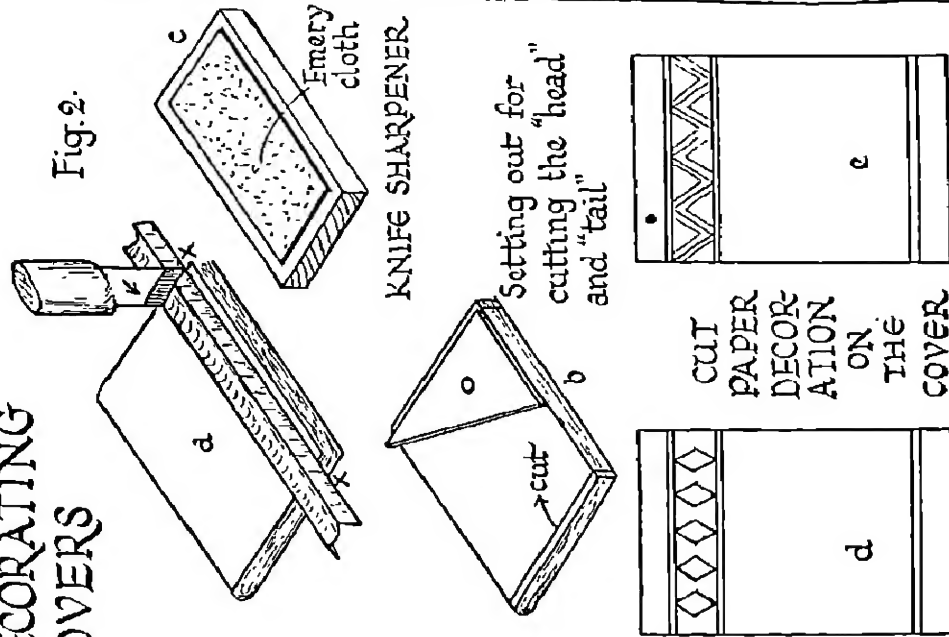


FIG. 2

is of dark colour, the black lines of the transfer would not be visible. It is better in this case to rub the back of the squared paper with light coloured pastel, or chalk. The transferred line will then show up clearly on the dark paper.

Two-Section Books

Single-section books which contain very many pages may feel rather clumsy in the hand. If, therefore, in a small book it is necessary to have many pages, two sections should be made together containing the requisite number of pages, plus the end papers. More sections may be sewn together in one of the ways shown in Fig. 7.

In Fig. 7a the sections are sewn up separately and then caught together with thread at the three points X, X, X. The knots must be tied quite firmly, so that there is no danger of the sections being pulled apart.

When using the second method, *b*, the sections are a little more awkward to handle, but it will be found that if they are kept flat on the table one on top of the other, as if fixed on a stitching frame, each section may be opened at the middle, the stitch made, the needle brought outside, the second section opened, the needle passed in and out, and so on, the process being quite simple. Note that the sewing begins and ends at the right-hand end.

Difficulty arises when the attempt is made to hold both sections in one hand, and, at the same time, use the needle and thread in sewing into the middle of each.

When the sewing is finished the back of the sections should be more firmly and definitely fixed by the sticking on of a strip of book muslin, as shown in Fig. 5. If this muslin is simply pasted on to the back of the sections without any pressure being applied to keep the back folds tightly together, the result will probably be that, when the book is opened, it will be found that the muslin on the back is visible through the joint between two sections. This will be avoided if the book is put into a press as shown in Fig. 8. It is not absolutely necessary to use the backing boards shown in the sketch, but the aim of the operation is to concentrate pressure at about $\frac{1}{2}$ in. from the back edge. This pressure squeezes

the two sections very tightly together, leaving a slight groove between them. Hot, thin glue should then be brushed on to the back of the book, rubbed well in with the fingers, and left until just *not* tacky.

The back should be tapped carefully with a hammer or rubbed firmly with the handle so as to flatten out the groove between the sections. The aim is to secure a back of slight, even curve. The back is again painted with a thin coating of glue and a strip of muslin laid on. The back is rubbed with the fingers to bring the glue up through the muslin, thoroughly to enmesh it. The book is left in the press for at least twelve hours.

The book then has a solid back not thickly coated with glue, and when opened the dividing line between the sections should not be visible. Fig. 9 shows two other methods of fixing two-section books by means of stitching through holes punched in the sections. The illustrations *c*, *d*, *e* show the folding of a piece of stiff paper over the back and a portion of the top and bottom of the book.

Fixing the Boards

The boards are fixed as described in Fig. 11.

Three-Section Books

Small books containing three or four sections may be put together in the above way.

A Simple Binding for a Small Multiple-Section Book

Several periodicals nowadays issue with their main publication a supplement for boys and girls. These are two- or four-leaf sections, and may be made up quite easily into a book to contain the issues of one year. Figs 10a, *b*, and *d*, *e* show two ways in which this may be done. In Fig. 10b the twelve monthly issues are put together in order, January to December, and the title page is so placed as to contain all the sections, i.e. the front page of the title page is uppermost and its other page is underneath all the sections, making the back page of the book. Set out, and with the leather punch, or a bradawl,

CUT & TORN PAPER USED IN THE DECORATION OF COVERS

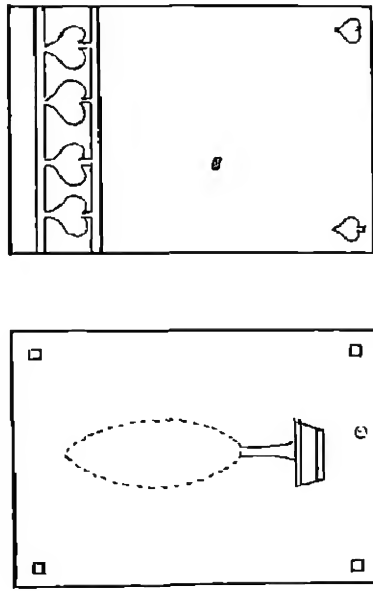


Fig. 3

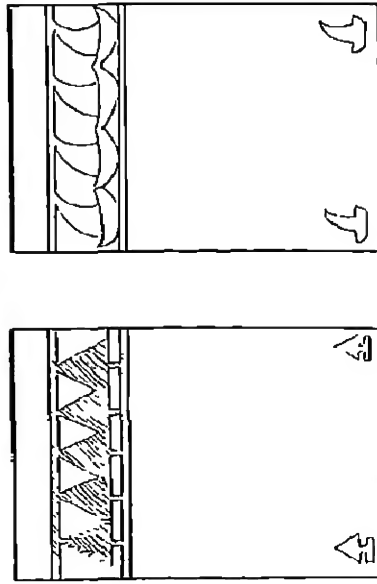


Fig. 3

FIXING GUARDS IN ALBUMS

Fig. 4

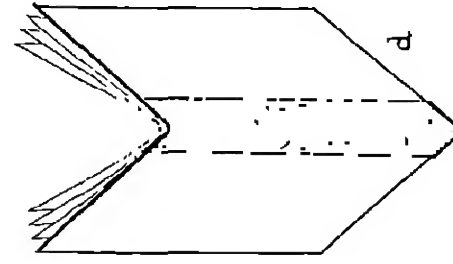
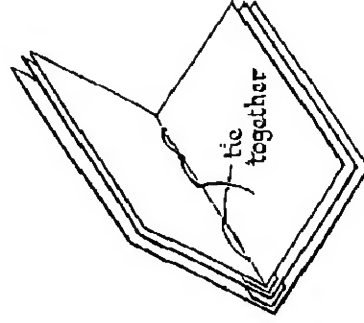
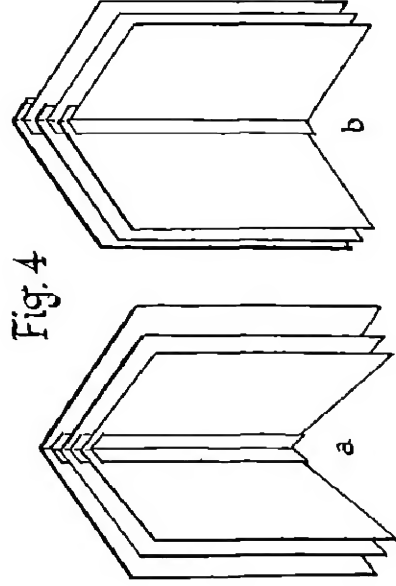
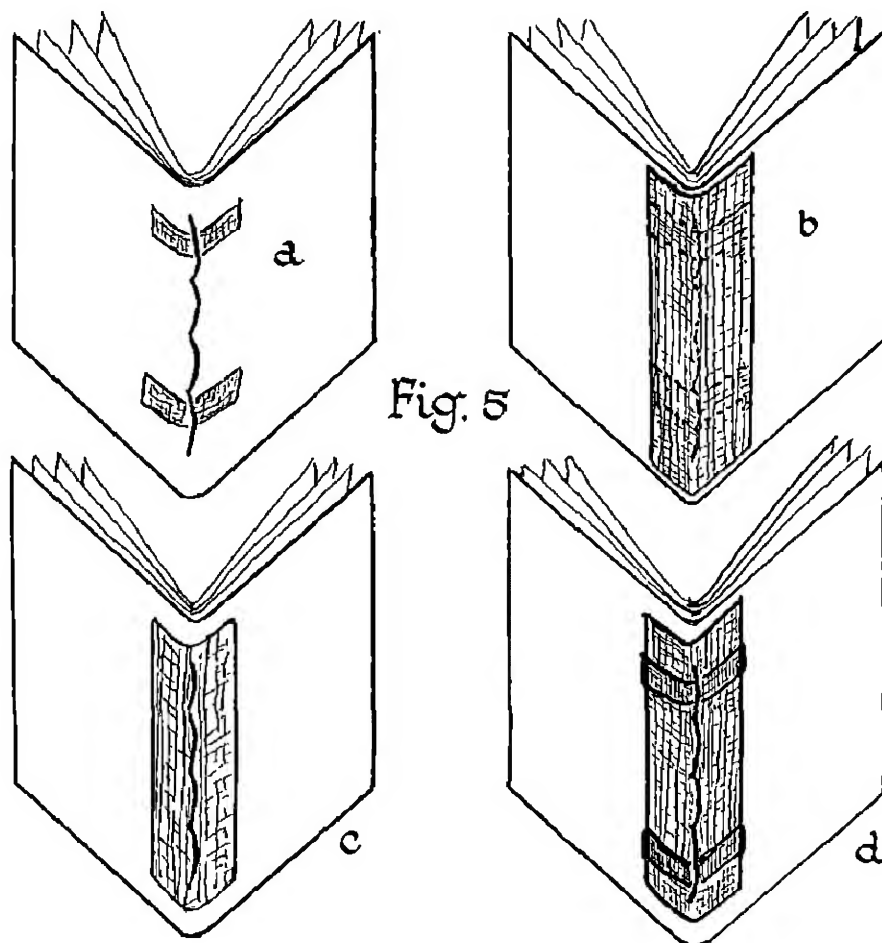


Fig. 4

STRENGTHENING THE BACK OF THE BOOK



"a"—shows tapes threaded, "b"—the muslin stuck on, "c"—the muslin sewn in, "d"—the tapes threaded on top of the muslin—

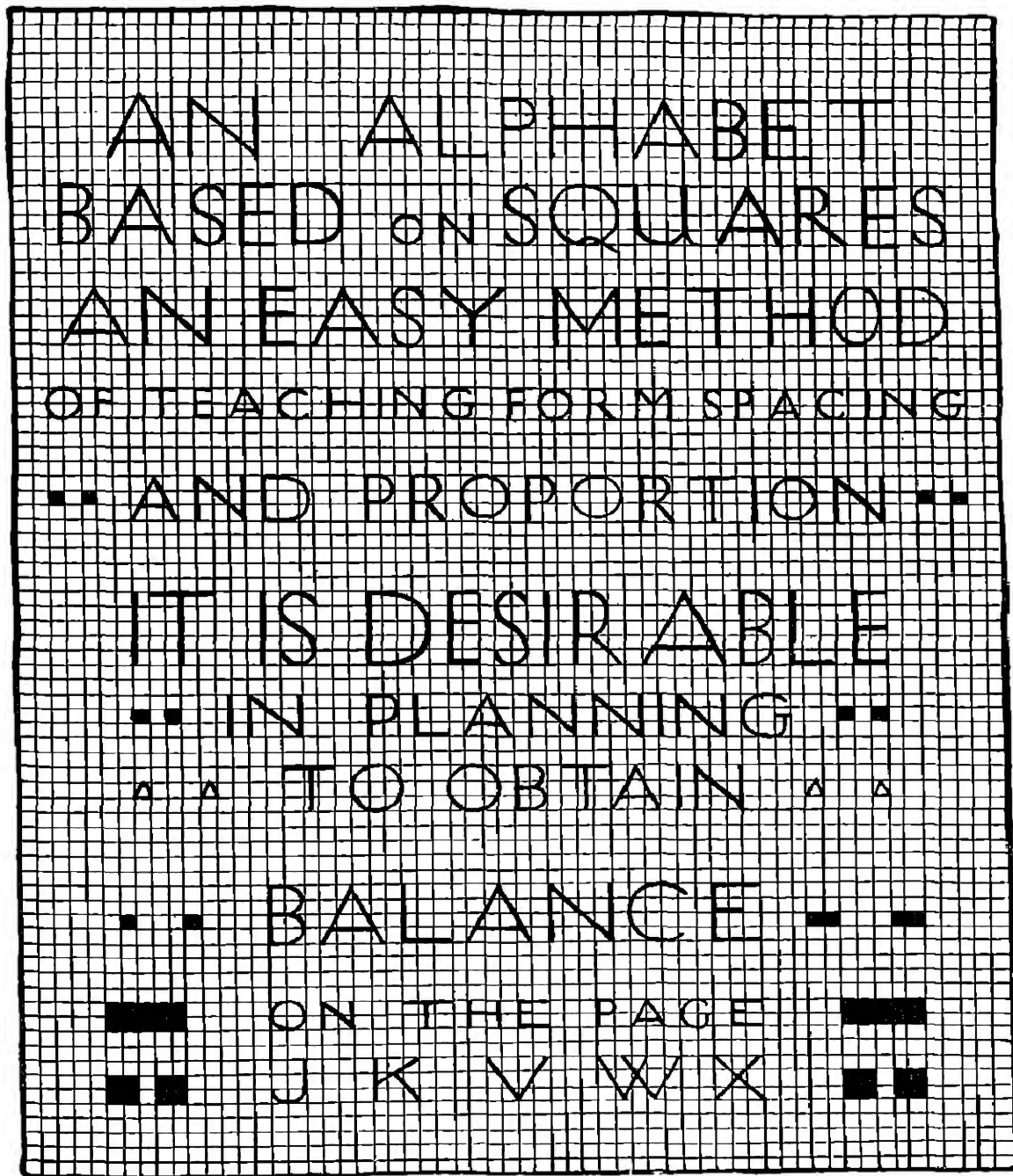
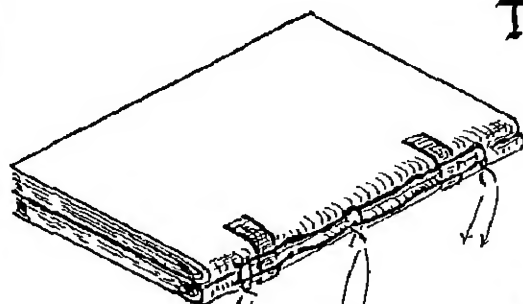


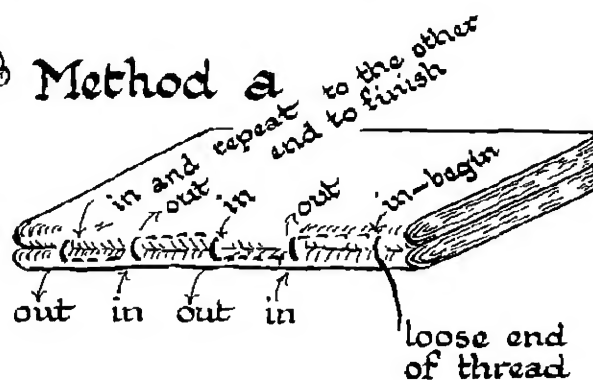
FIG 6

TWO-SECTION BOOKS - SEWING & FIXING TOGETHER THE SECTIONS



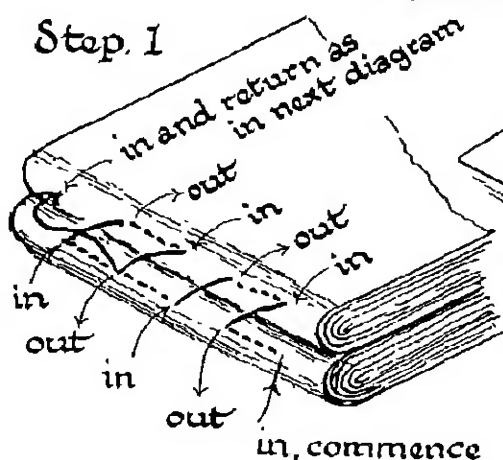
Tied together with
separate threads

Method a



Method b

Step. 1



Step. 2

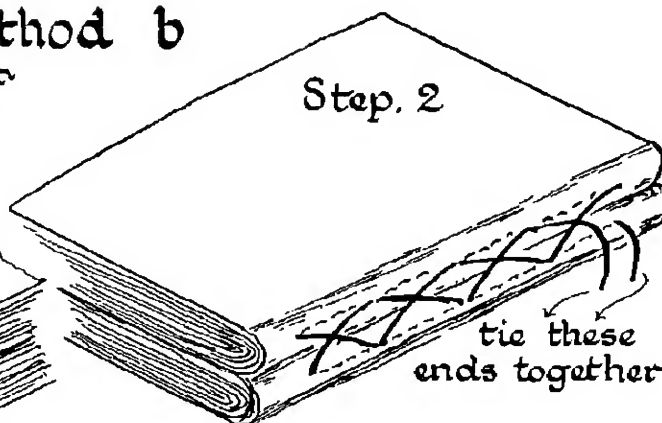
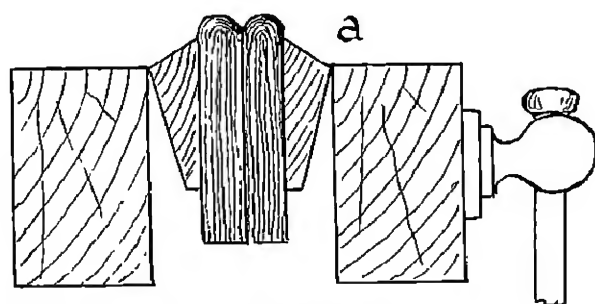
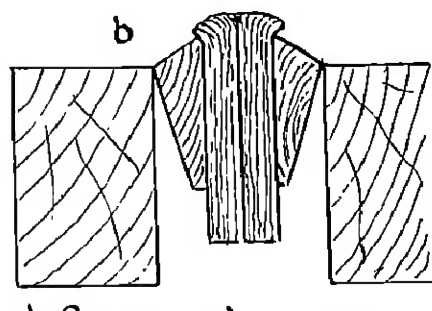


FIG. 7

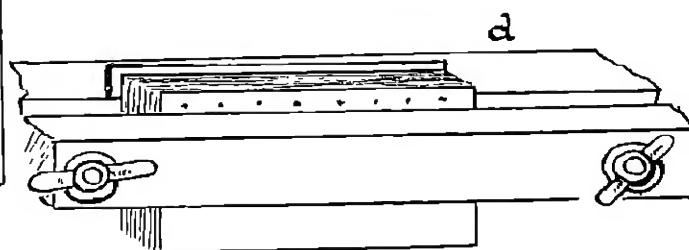
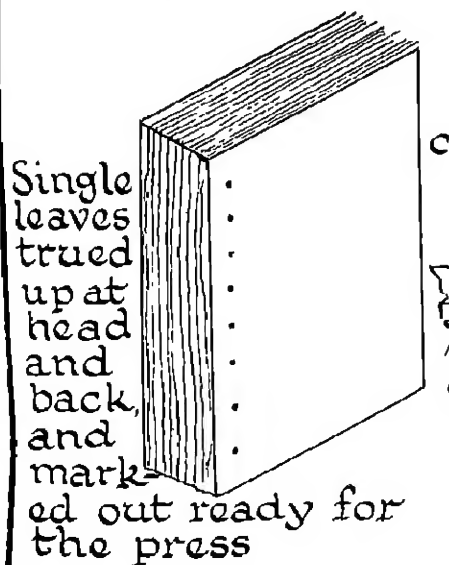
TWO-SECTION BOOKS & SINGLE LEAVES — — — —



Before gluing



After gluing
tapping or
rubbing —
Now put on muslin



Single sheets in press
ready for holes to be
bored, use a fine awl
fixed in a drill

FIG. 8

bore three holes through the book as shown. In doing this be very careful to hold the sections firmly together so that they do not slip under the punch, or bradawl, and so spoil the registering of the holes. It will be easier to set out and punch the holes in each section separately, measuring each from the back and head of the section.

Prepare a cover as shown in Fig. 10c, and punch these holes to coincide with those in the book. Note that the holes are made only in the back of the cover, not in the front. Now take a strip of manilla and punch holes in that also to coincide with those already made in the book and cover. Place all three parts together and fasten them in one of two ways. Either use long paper fasteners threaded through holes and the ends opened out, see Fig. 10d, or take a piece of cord or ribbon and thread it through the holes so as to fix all together, tying the knots on top inside as shown in Fig. 10e.

A stronger method of binding the back would be to fold over the back of the book a piece of bookbinders' cloth or leather. One advantage of this method is that eyelets may be fixed into the holes, and so prevent tearing by the cord or paper fasteners. Eyelets may similarly be fixed in the cardboard cover.

Still another plan would be to bind the back of each section with a strip of cloth about $1\frac{1}{2}$ in. wide and punch the holes through that. This method prevents the tearing of the paper when the sections are removed and replaced.

Single leaves may be bound in the same way. An effective method of boring the holes so as to prevent movement in the sections and consequent loss of register is shown in Fig. 8, c and d

Books with Stiff Covers

There are several ways in which books can be bound in stiff boards. We should at the outset like to suggest that to make a single-section book, and then a separate cover for it, and stick the former inside the latter to obtain a bound book in stiff covers, is not good bookbinding practice for schools. The difficulties of obtaining the correct size of cover for the book, so that margins are not too wide, and of putting the book correctly into position in the cover so that it will ultimately open without tearing the end papers

are very often quite beyond the experience of the Junior child.

Moreover the sequence of operations described in the following will be found materially to assist in the understanding and execution of work in the heavier bookbinding of the Senior School.

Fig. 11a shows a book stitched up, edges left uncut, and the muslin stuck on or sewn in with the leaves. Boards of strawboard are cut about the size of the book and stuck on as shown in Fig. 11b. Note the space of $\frac{1}{4}$ in. from the edge of the board to the back of the book. It is most important that this allowance be made, as by it a free working hinge is obtained.

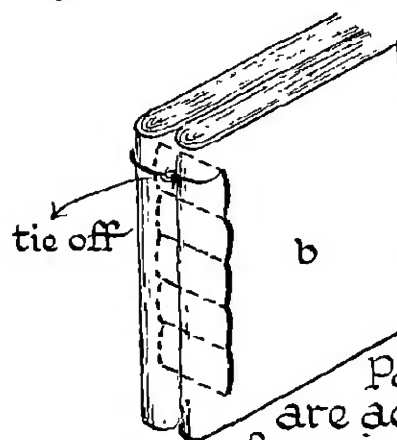
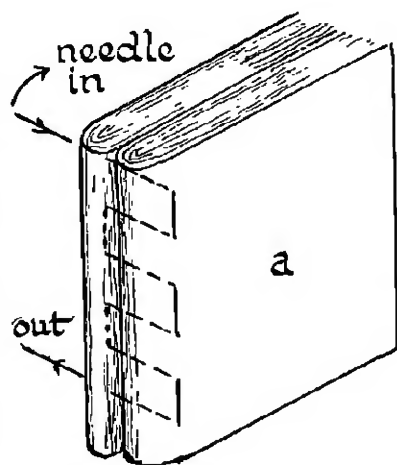
The back is then covered with cloth as in Fig. 11c. The strip of cloth is about 2 in. wide, giving a little less than 1 in. on each cover, and the ends are *not* turned in. The remainder of each cover is now covered with paper to match the cloth. The edge of each side of the latter is *just* covered by the edges of the paper. It is often found that cloth is put on and then much of it is covered up by the paper. This is not only a waste of cloth, but makes an ugly wide raised margin which, as it is seen through the cover paper, spoils the appearance of the cover. The book is now left to dry and then the edges are cut, as illustrated in Fig. 2.

Quarter-bound Book

Make up the single-section book as above and before the boards are put on cut the edges. Prepare the boards to such sizes as will give $\frac{1}{8}$ in. margins on the front, top, and bottom or head and tail of the book. Note that the boards must be set on the book $\frac{1}{4}$ in. from the back, as shown in Fig. 11b. The width of the board will therefore be $\frac{1}{4}$ in. less than the width of the book, and its length $\frac{1}{4}$ in. longer than that of the book, since the cover projects $\frac{1}{8}$ in. at side and $\frac{1}{8}$ in. at top and bottom of the leaves. Now prepare a piece of bookcloth for the back, about 2 in. wide and $1\frac{1}{2}$ in. longer than the book. Paste this on the back. Stand the book on end as in Fig. 12a. Draw the inside of the book away from the boards at the back and turn the cloth into the space so formed, over the top edges of the boards as in Fig. 12b. Fig. 12c shows the finished effect when both ends have been turned in

BINDING TWO-SECTION BOOKS

Fig. 9



NOTE:—
The second
line of stitching
passes
thro' the same
holes as the
first

Paper covers
are added as
for single-section
book

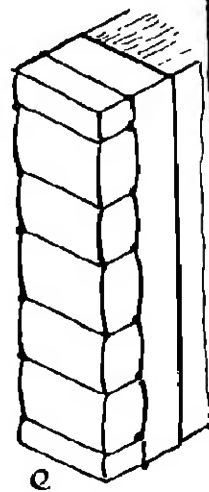
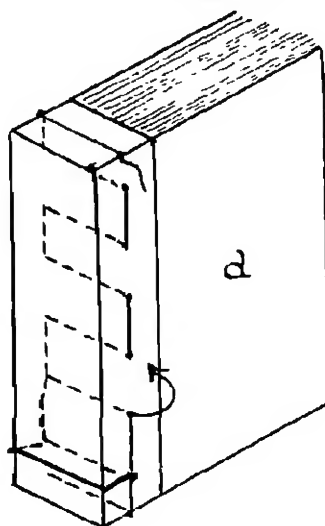
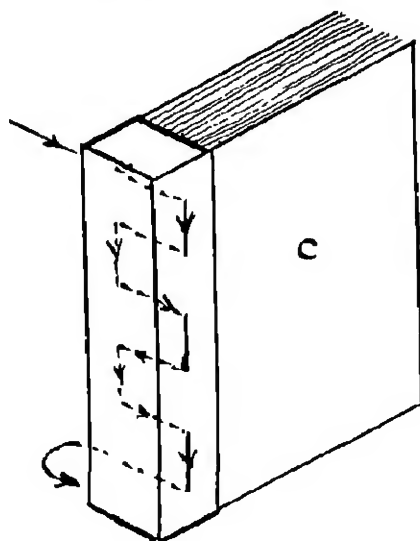
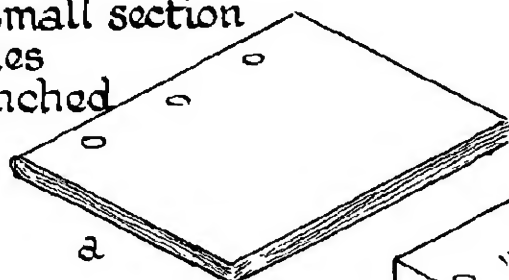


FIG. 9

BINDING SMALL MULTIPLE SECTION BOOK — — — —

Fig. 10

A small section
Holes
Punched

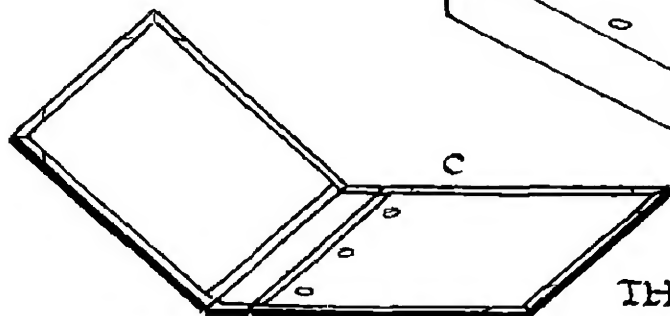
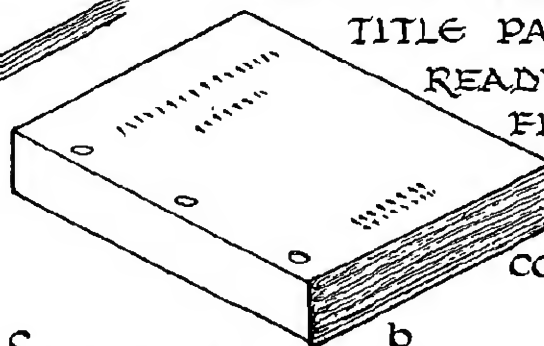


THE SECTIONS
ARRANGED

INSIDE THE
TITLE PAGE

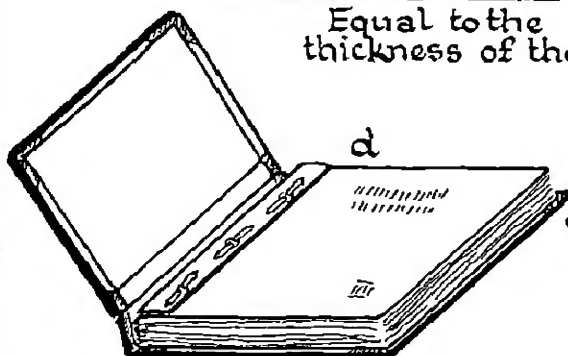
READY TO

FIX IN-
SIDE
THE
COVER

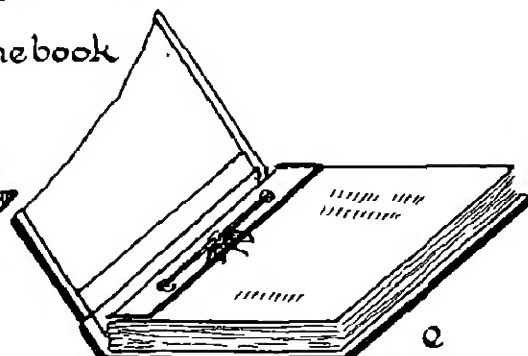


THE COVER

Equal to the
thickness of the book



SHOWING LONG PAPER
FASTENERS USED AS CLIPS



THE SECTIONS HELD
BY SILK CORD

FIG. 10

FIXING THE BACKCLOTH AND BOARDS

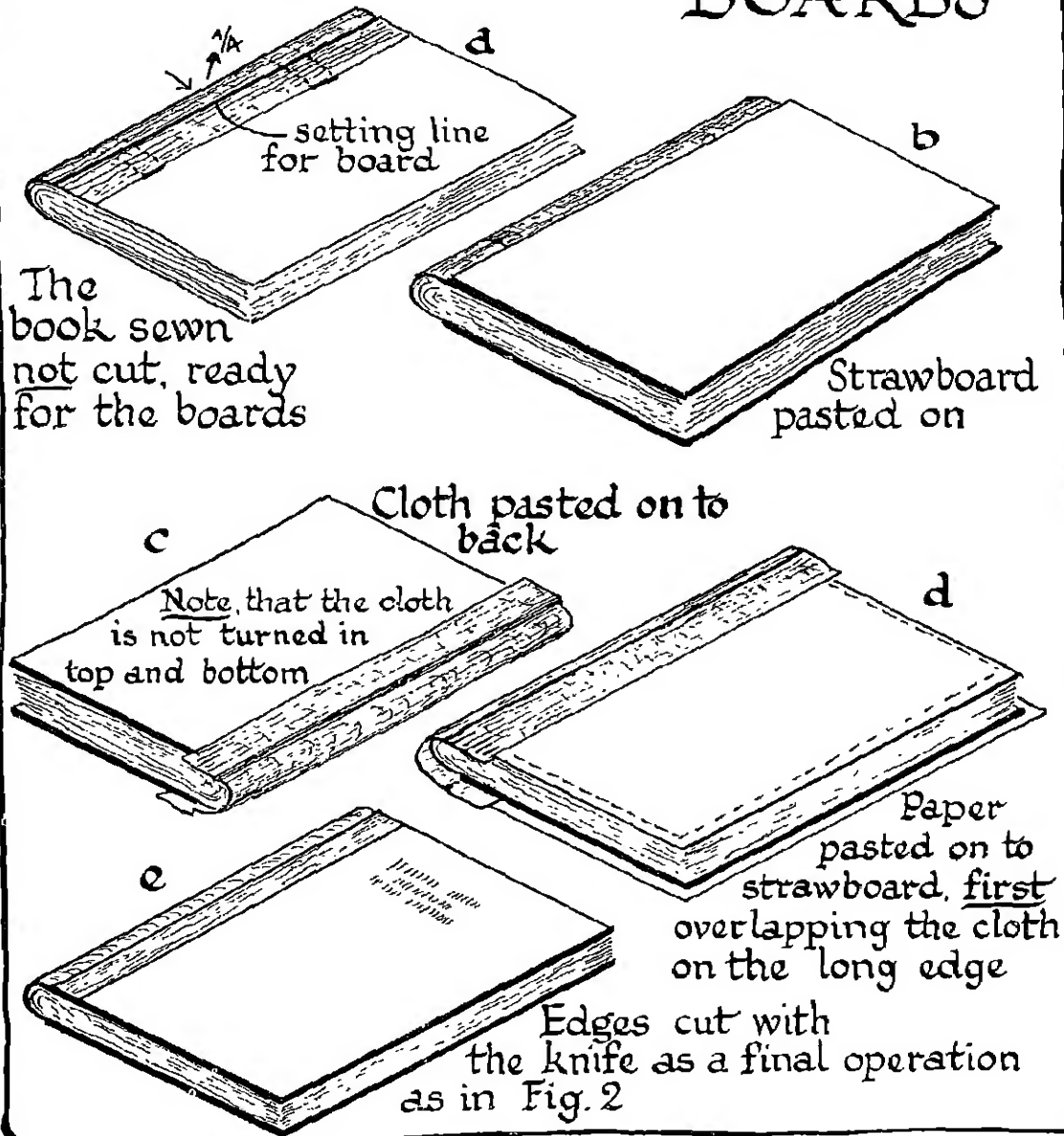


FIG. 11

The next operation is the covering of the remainder of each board. The shape of the covering paper is obtained as shown in Fig. 12*d*. Note specially that the overlap of paper on the cloth is not more than $\frac{1}{16}$ in., and that the small projection of paper beyond the corners of the board is equal to the thickness of the latter. This allowance ensures that when the margins are turned in the corner will be properly covered with paper both outside and inside, as shown in Fig. 13, *c* and *d*. *a* and *b* show the result when the allowance is not made on the corner of the paper cover.

To finish off the book lay it flat on the table. Lift the cover, paste the end paper, and close the cover carefully down on to it. Do not, in any circumstance, lift the end paper up to the open cover. To do so will ensure very ugly creases in the end paper near the joint of the book, which cannot be concealed.

Half-bound Book

Proceed as for the quarter-bound book up to the stage where the cloth has been put on the back. Now prepare pieces of cloth for the corner of the board by cutting two squares of a size according to the size of the book, and to the proportions which the cloth covering of the corners and the back must bear to it in the general design of the cover. The size of the squares may vary from 2 in. to, say, 4 in. Each square will give two corners when set out and cut as in Fig. 14*a*. The method of fixing and turning the margins is shown in *b* and *c*. Note the allowance made at the corner to ensure that the cloth covers the board. Observe, too, that the lines of the texture of the cloth are parallel and at right angles to the lines of the book. This is important. It is so often found that the method shown in Fig. 13 is adopted in covering corners. A rectangle of cloth is cut and fixed as in *e*, *f*, and *g*. Observe that the texture of the cloth is at 45 deg. to the lines of the book, and while this may not be so very noticeable on the inside it shows up quite badly on the outside of the cover and spoils what might otherwise be a first-rate piece of work. Moreover, the finish on the inside by the latter method is not so neat and unobtrusive as by the former.

Diagram shows the method of obtaining the shape of the covering paper which is to be used for fitting the still uncovered part of the board. A rectangular sheet of paper is placed under the board, and the lines of direction of the edges of the cloth, back, and corners are marked on it. The left-hand edge is usually set so that it *just* overlaps the cloth on the back. The only marks then necessary are those which indicate the edge of the cloth corners. A slight overlap $\frac{1}{16}$ in. is allowed and the paper cut to shape shown. It is pasted and laid in position on the cover, rubbed down very carefully, and margins turned over to the inside of the cover. The end papers are pasted, as previously described, and the covers laid down on to them to complete the construction of the book.

A Folded Book

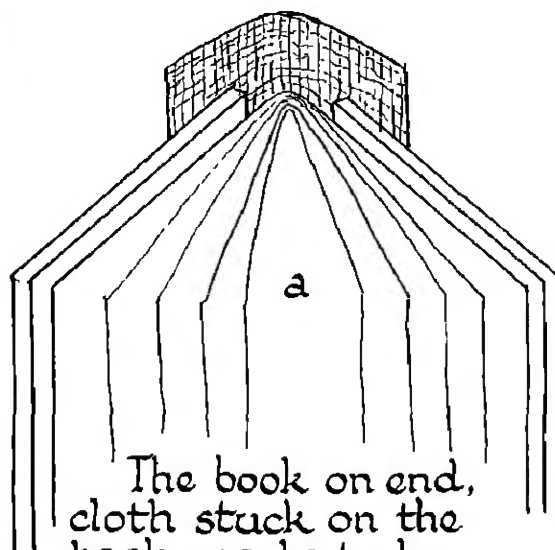
A useful sort of book which can be put into the course at this point is made up as shown in Fig. 15. Sheets of paper are cut up to form strips of a width equal to the height of the book and of a length equal to two, three, or more "leaves," as shown. The lengths so cut are folded and bound together with strips of cloth about 1 in. wide and of a length equal to the height of the book. These separate lengths are made up to the length of the book required, and the boards for covers are made of cardboard covered with cloth or paper, whole bound, or cloth and paper, half or quarter bound. The boards are fixed by pasting down on to the end papers. The covers are decorated as required by the use of all-over printing with sticks or lino blocks, paper cutting, or colour, or the paper used may be paste- or oil-coloured before putting on to the cardboard.

The book may be made into a useful form of catalogue of school library books if tabs of book cloth are fixed at intervals in its length. These are made by extending the length of the piece of cloth used for binding, and strengthening the angles and joints of the pieces of paper. Holes are made in the tabs so that they may be hung on nails or cuphooks fixed into the dado or chair rail along the wall of the classroom or library.

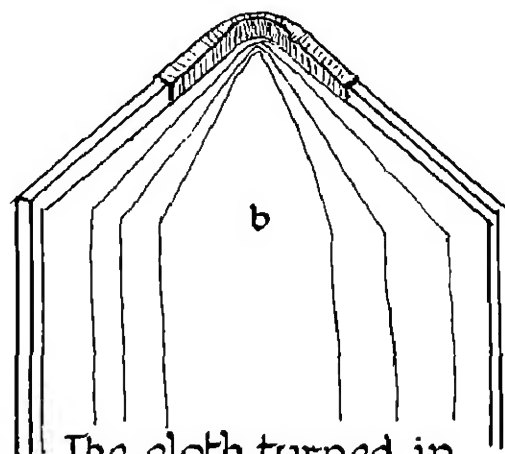
The writer recently saw this idea used to contain the whole of the academic work in practical

QUARTER-BOUND BOOK—

Fig. 12

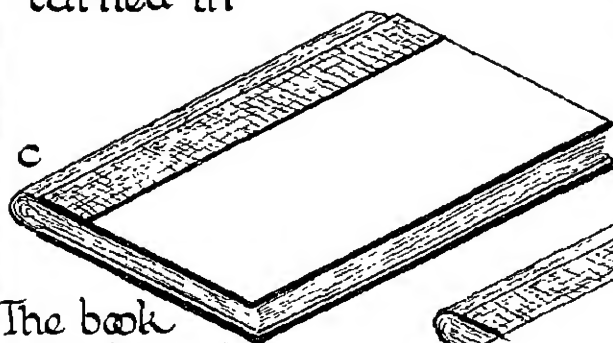


The book on end,
cloth stuck on the
back ready to be
turned in

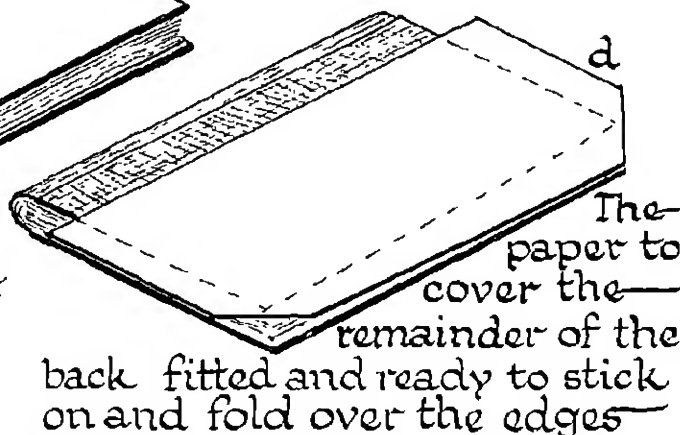


The cloth turned in

Note: Do not cut the
cloth



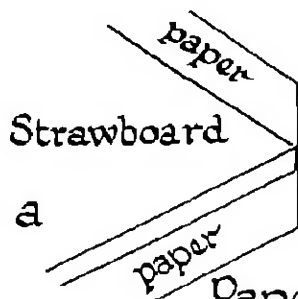
The book
cut, boards
fixed and cloth put
on the back



The
paper to
cover the—
remainder of the
back fitted and ready to stick
on and fold over the edges

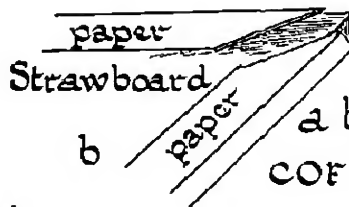
FIG. 12

FITTING AND COVERING CORNERS



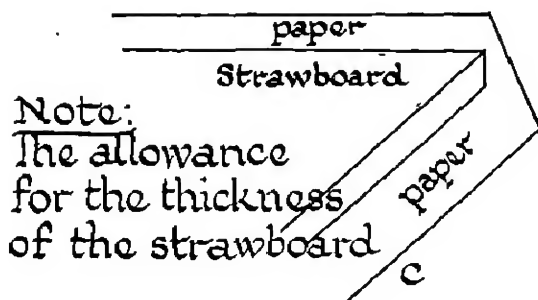
a

Paper cut
close to corner
of strawboard



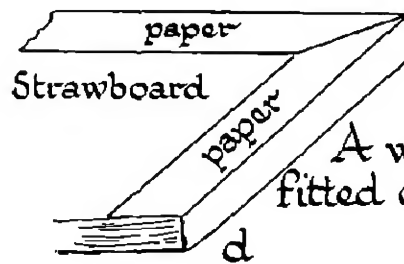
b

The result of
a badly covered
corner



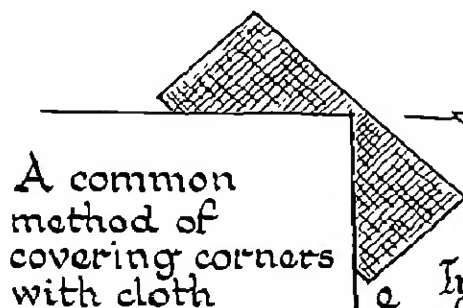
Note:
The allowance
for the thickness
of the strawboard

c



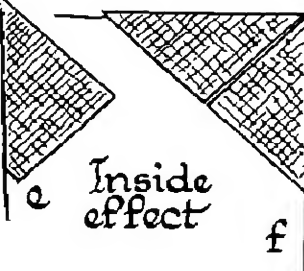
A well
fitted corner

d



A common
method of
covering corners
with cloth

NOT GOOD



Inside
effect

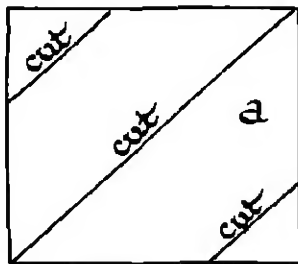
f

Outside
appearance

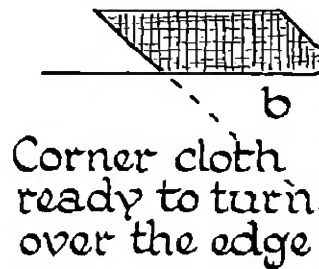
Note: The grain
of the cloth is not
parallel to that on the
back of the book

FIG. 13

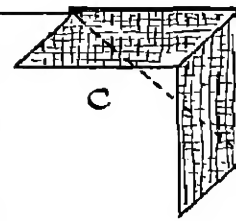
FITTING AND COVERING CORNERS AND BOARDS



Setting out
2 corner pieces
of cloth



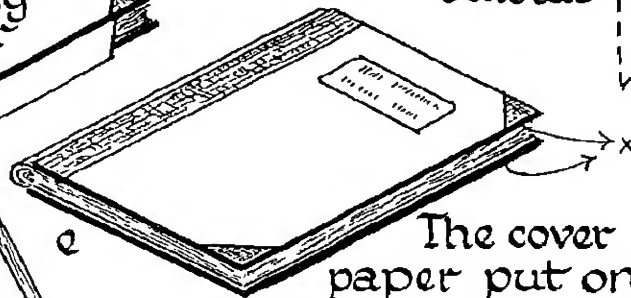
Corner cloth
ready to turn
over the edge



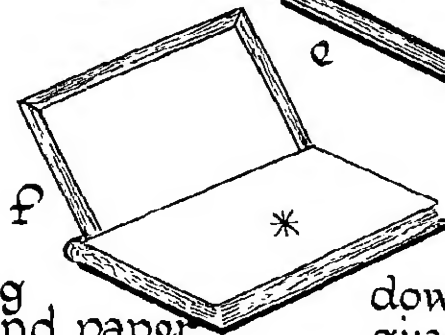
Inside
appearance



Fitting
the cover
paper



The cover
paper put on
and turned in

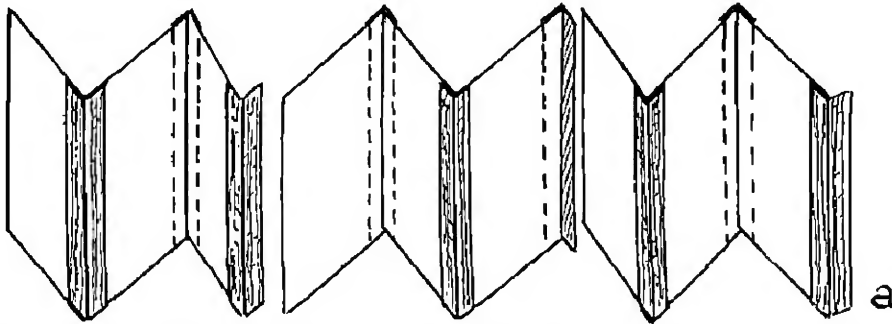


Fixing
the end paper

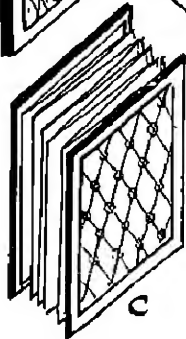
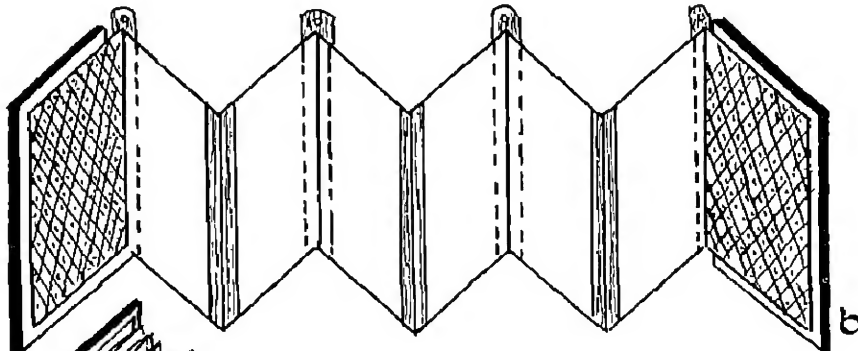
* Paste this end paper
and lay the board
down on to it. This will
give the neatest result

FIG. 14

A FOLDED BOOK — — —



Strips of paper cut, folded & bound ready to bind together to form the book



SKETCH
OF THE
FINISHED
BOOK
WITHOUT
TABS

The book
with the boards
attached, and
papers printed,
and cloth fixed
for suspension

FIG. 15

arithmetic, English, and geography which had been carried out in connection with the making and furnishing of a large doll's house. The practical work in the house was a communal job, and the large sheets of calculations, etc., forming the pages of the book were also produced by the same children. The result was in every way a very valuable piece of work.

Making End and Cover Papers

There is a great deal of scope in the Junior School for following up the simple pattern-making which is done in the Infants' School. This pattern making might very well be applied

to the production of really effective printed papers which can be used for covering and for end papers inside the books which the children bind. Work of this kind helps to give a really practical drive to the school scheme in art.

Printing Tools. In Figs. 16, 17, and 18 suggestions are given for printing tools made from a wide variety of materials. Matchsticks, kindergarten sticks, wood of various sections and sizes, india-rubber, cork, moleskin, and old pencil ends are all used quite effectively. Water-colour is generally used as the printing medium. Most of the usual media can be used, e.g. oil colours, dyes, inks, enamel, but it is advisable

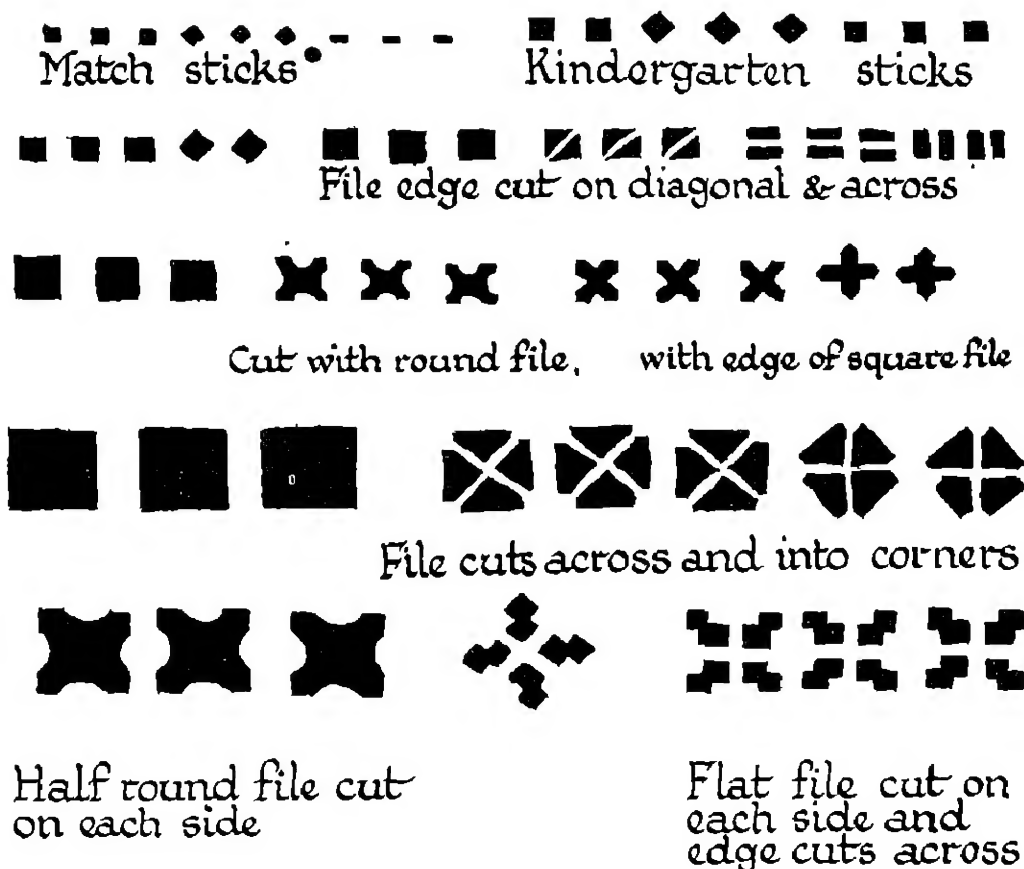


FIG. 16

"Stick" Patterns for End and Cover Papers
(Square sticks of various sizes were used)

at first to limit the colour to, say, water-colour and ink.

The "sticks" are used in the same way as the stamping tool as used in the Post Office. The colour is put on to pads of felt simply made by stitching together 2 or 3 thicknesses of felt. Suggestions are given in Fig. 19 for using the "sticks" in making patterns for borders, "spots," and all-over patterns. The latter show the need for setting out the lines of the background.

These designs may be carried out in any colour scheme, on coloured paper to harmonize. It is advisable to begin simply, restrict the number of units in any design, and grade the development to fit the ability of the children.

Care and Repair of Books

A great deal of really useful work can be done by the children in repairing, rebinding, or putting into more permanent covers the small single-section "readers" or arithmetic books, etc. These books are so apt to lose their paper covers that it is generally advisable to deal with them as soon as they are received into school.

The care of books is very easily taught while this kind of work is being done. Children will soon learn that it is not wise to place a book in the direct sunlight, that books should not stand loosely together, and that books require dusting periodically. The use of bread crumbs for removing dirt and pencil marks from paper should be demonstrated, also the repairing of torn leaves by means of transparent paper such as is used in repairing music.

In replacing paper covers with more substantial ones 2 or 3 methods may be adopted, but preliminary operations are the same in each case.

The book may be a single-section "reader" which is losing its paper cover: the covers are torn, the edges dirty; the book is held together by 2 wire staples. First strip off the old cover. Prepare 3 sheets of paper in size a little longer than the book is when opened out; fold them round the back of the book to make three extra leaves at each end. Take a needle and white thread and stitch with four stitches, beginning in the middle, going to each end in turn with two stitches passing through each hole twice, and tying off at the inside middle. This will fasten in the new sheets. *Now* take

out the wire fasteners by first of all lifting the ends of each with the point of a knife. These ends will be found inside, and the wire may now be drawn clean out by pulling with the knife point from the outside of the old book, that is from inside the pages which have been put on. Straighten any folded corners and press the book thoroughly, and then set out for cutting sufficient off the dirty edges to clean them. Cut with the knife, working along the edge of the non-slip rule. If the corners are still not clean they may be cut away a little with either a knife or a chisel. The above is the preliminary preparation necessary for most books.

A tough, hard-wearing cover of manilla paper may now be put on. Open the book at the middle, lay it face down, and measure its length and width, add $\frac{1}{4}$ in. to each dimension, and cut out a piece of manilla paper to that size. Paste the back of the book and lay on the manilla paper cover, noting carefully the position for the margins by laying the manilla paper down on the table, lifting the book carefully and placing it centrally on the cover. Rub the book well down on to the cover and leave to set and dry under flat pressure. When dry close the book, and again place under pressure for a few hours.

Title. The cover may need a title. It may have been possible to rescue the title from the old cover, cutting it out and pasting it carefully on to the new cover. Some regard should be paid to the position of this label on the cover; good lessons in design can often be obtained from even so small a subject.

Cloth-covered Book. It may be desired to cover the book in whole cloth, and so give a cover which will not wear out so quickly as paper of any kind. Great care must be taken when fixing such a cover. If the cloth is thin and the paste is applied to it, it may stretch when it is being rubbed down to the paper.

A soft pad, such as a clean duster, should be used for rubbing. Do not use finger ends for rubbing, as the pressure is concentrated too much, and will result in the grain of the cloth being dragged and spoiled. This concentration of pressure may also work the paste through the cloth, so taking the sheen off the surface and leaving a paste stain.

PATTERNS IN STICKS

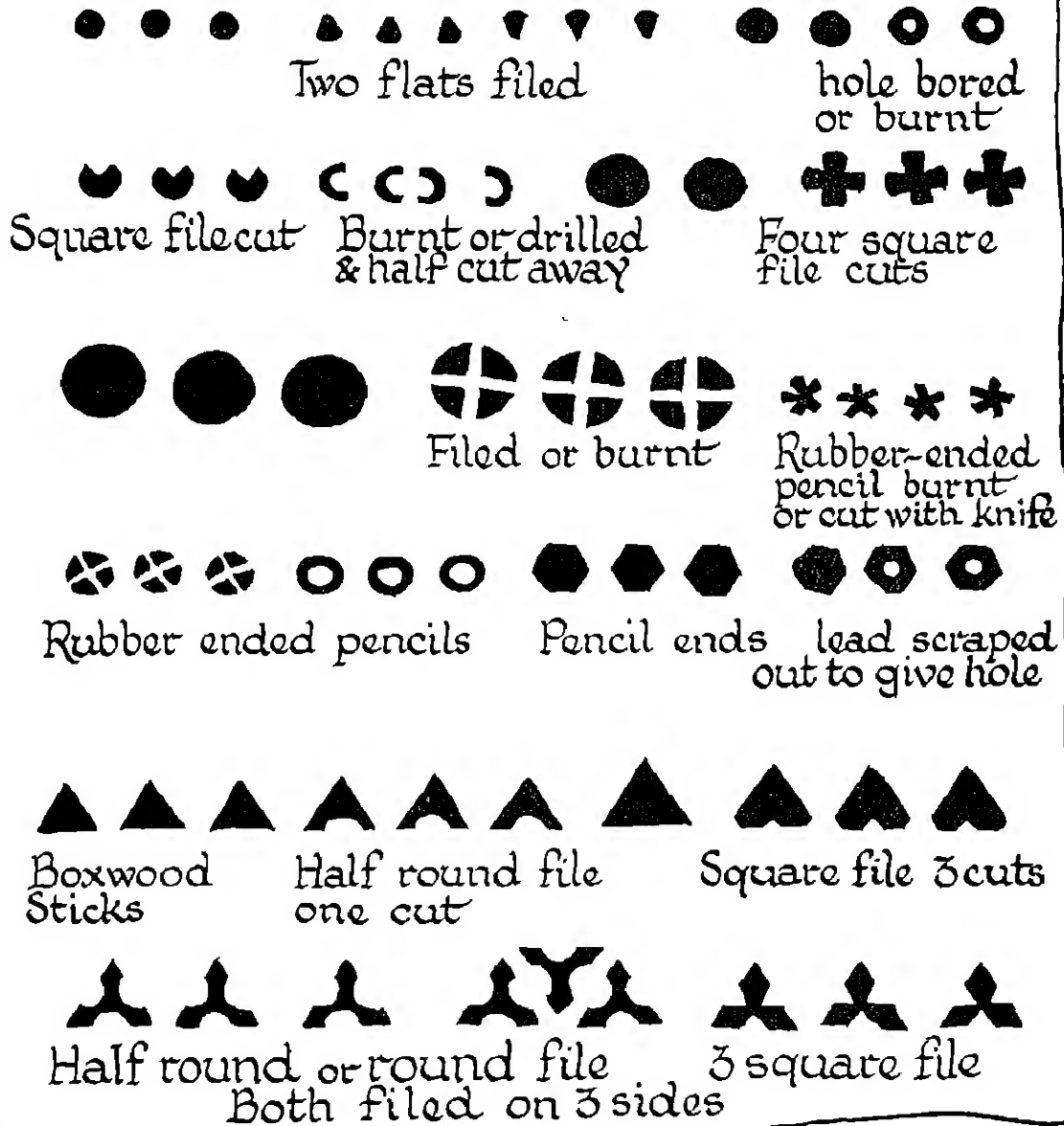


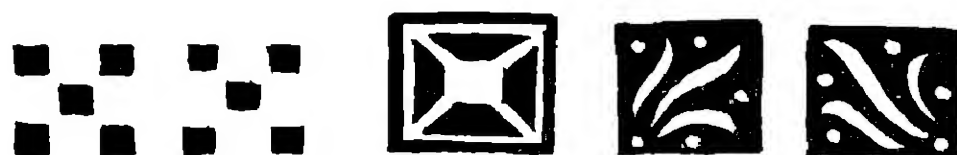
FIG. 17

PATTERNS CUT IN RUBBER, CORK AND LINO — — —

CUT ON THE ENDS AND SIDES OF PENNY RUBBERS
WHICH HAVE BEEN CUT IN TWO TO MAKE 4 ENDS



LARGER PATTERNS BURNT OR CUT OR FILED ON CORKS



THESE TWO ROWS SHOW PATTERNS CUT IN LINO

The small pieces are glued on to the end of a piece of wood

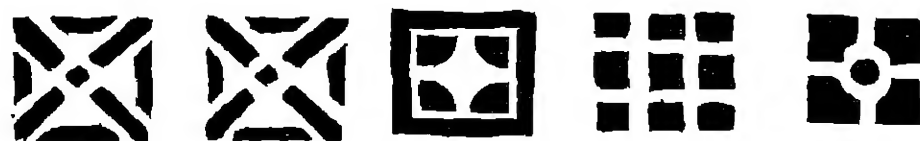


FIG. 18

SUGGESTION FOR THE USE OF THE PATTERNS GIVEN

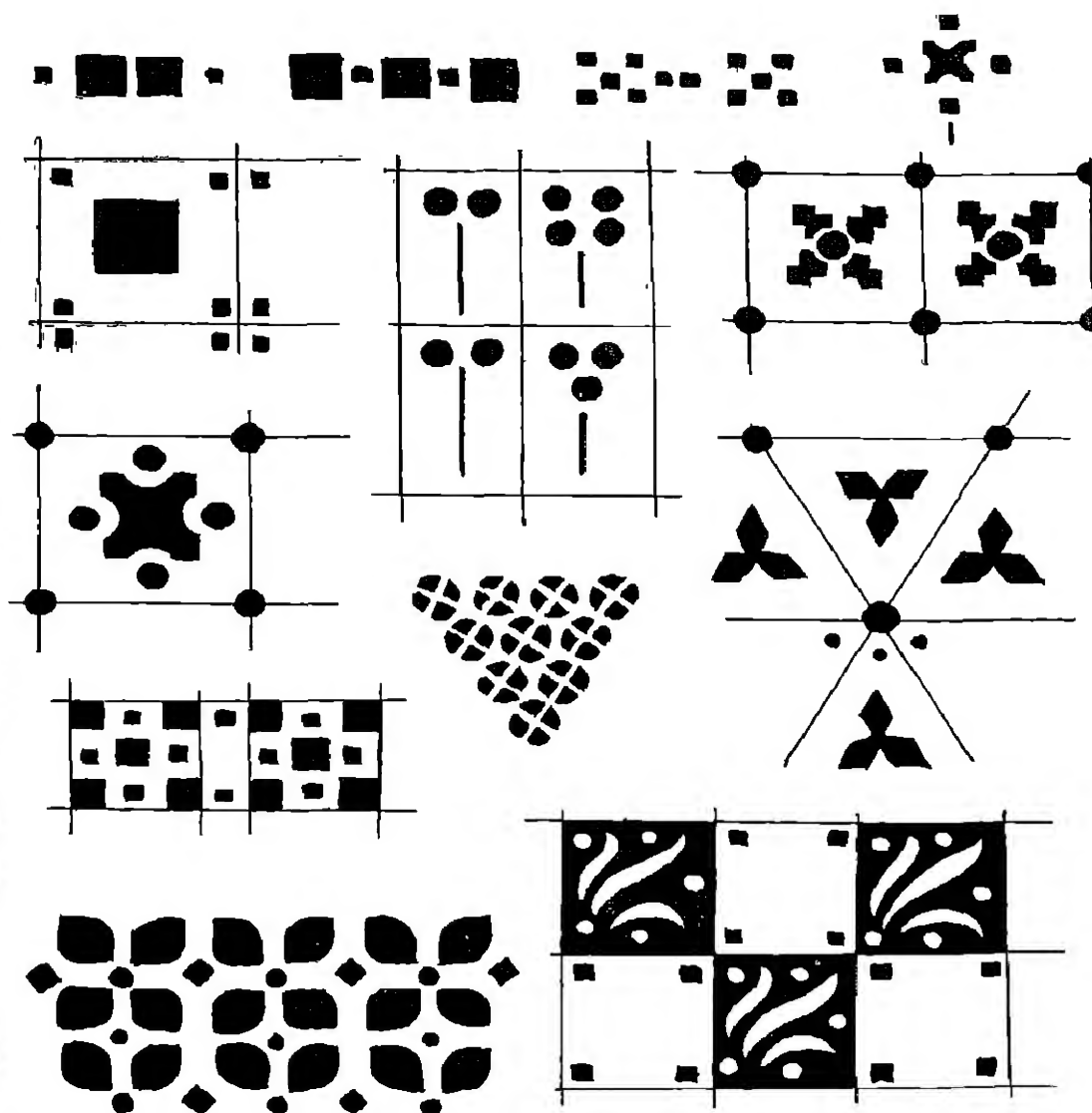


FIG. 19

Many good book cloths will take the paste quite well, and only great carelessness will spoil them. When using these cloths it is advisable to spread the paste on the back of the open book as described in the previous sections and, having cut the cloth to the size of this surface, lay it dry on to the pasted surface. Place the book under flat pressure to dry and set, and then fold and put under pressure again for a few hours. If necessary, trim the edge of the cloth with the scissors or knife to fit the size of the book. It is possible for the Juniors to carry out other simple repairs on small books, but great care should be exercised in the selection of work of this kind. Many repair jobs require much experience in handling materials, and also good knowledge of the construction of books, some resourcefulness, and a great deal of care and forethought.

Torn-out leaves may be replaced, torn backs be stuck down, corners be stiffened and recovered, and end papers be repaired or replaced

Hints on the Use of Paste and Glue

Paste Very wet pastes, i.e. those which are very thin, are not good for use with cloth and strawboard. Thin pastes easily soak through the cloth and spoil the surface. They generally take longer to dry and set. They are expensive. The water in them is quickly dried up by strawboard, leaving very slight stickiness which is not sufficient to make the paper and board adhere.

A thick paste, or a glue, is best for strawboard. A thick paste can be thinned down if necessary, a thin paste cannot easily be thickened. When a thickish paste is being thinned with water, the mixture should be stirred very thoroughly until a creamy consistency is obtained. The tendency is to stir insufficiently and leave the water on the top of the paste, dipping the brush into that. The result is not often satisfactory.

When spreading paste on a large surface a good deal of time may be saved if a piece of strawboard, say 4 in. by 2 in., with a straight end is used as a spreader. This little aid not only spreads the paste more quickly, but it also spreads it perfectly flat. No lumps will be left behind this "brush." The paste is used more economically, and, being laid very thinly, surfaces adhere much more quickly than they do when more paste is present. When laying paste always work from the centre of the sheet outwards to the edges. Lumpiness underneath the surface of a covering paper or cloth is generally due to unequal spreading of the paste. Once fixed, the lumps cannot be removed without spoiling the surface of the cloth or paper.

If a large brush cannot be obtained for use in pasting, tie two or three together. If flour paste is made it

should be made thicker than is necessary, as it thins a little in cooling. When pasting, always have a clean duster to hand. This is most useful for wiping the hands clean and for rubbing down the paper to free it from air bubbles.

Always lay the cloth or paper to be pasted on to a piece of clean waste paper, and do not move it until ready to lift up for placing in position on the book cover, etc.

Do not attempt to hold the paper in one hand while using the paste brush on it with the other.

When using paste for repairing torn leaves a white paste is best, as it will not discolour the transparent paper. Cornflour paste is good.

The material pasted should be put into place as quickly as possible or dry places may develop and spoil the adhesion.

All preparatory cutting and fitting of panels of paper should be done before pasting is begun.

Paste brushes should be washed in clean water after use and dried before being put away. Do not use sour paste. Keep the lid on the receptacle when not in use, and so prevent the paste drying and hardening.

When putting a freshly-pasted piece of work into press be careful not to apply too concentrated a pressure or permanent indentations may be made in the surfaces of the covers. If too much pressure is applied the wet paste may penetrate the cloth or paper and spoil the surface.

Sheets of paper or, if available, of zinc should be used to separate the books which might be piled up to give necessary pressure.

Glue. It should be understood that the term "glue" as used here means carpenters' glue or such prepared glues as "croid," "gluit," and "glood." The "vegetable glues" are pastes which cannot do the work of glue in backing books, etc.

It will be found that while tinned glues are most convenient where there are no facilities for the use of a glue kettle, they are more expensive to use than carpenters' glue at 9d. per lb.

When fixing together pieces of strawboard to make thicker board, glue should be used as the adhesive. It gives a hard and stiffer result.

Glue should be used very hot and spread on the strawboard very quickly, otherwise it cools and sets in lumps and is then most difficult to spread.

When gluing strawboard together plenty of flat, even pressure should be applied for several hours, so as to ensure solidity throughout the board.

When a surface of strawboard has been covered with paper or cloth, and is consequently curved in one direction, the curve can be corrected by painting a coat of paste or glue on the opposite side. It may be necessary to put on two or three coats before the pull is quite counteracted.

Tinned glue can easily be melted over a small home-made spirit lamp, made from a boot polish tin or similar receptacle. If a pad of cotton-wool is packed into the tin and covered with wire gauze, methylated spirit may be poured on to this and, when lit, safely used as a lamp for warming the glue sufficiently to make it fluid for use.

LEATHERWORK

LEATHER is undoubtedly one of the most beautiful materials upon which to work, and its softness and suppleness of texture have a subtle fascination for adults and children alike. Owing to its durability, strength, and lightness, and the ease with which it can be cut and joined, it is almost an ideal substance for use in a thousand and one purposes. These qualities, combined with the soft shades of colour in which the skins can be procured, make leather one of the most suitable materials for educational purposes. In its use there is every opportunity for the exercise of the child's creative powers, and the successful completion of the created article demands resourcefulness, care in detail, and accurate workmanship.

History of Leathercraft

Working in leather is one of the oldest crafts. It must have been very early in the history of Man that the decoration of dressed skins began to develop.

Throughout the East this art has been practised from early times, particularly among the wandering tribes of Asia and Northern Africa. The art was introduced into Spain by the Moors during their occupation, and in this country reached a very high standard of perfection. The Crusaders, also, brought back many of the methods of the Saracens, and the craft spread rapidly throughout Europe during the Middle Ages. In these times the material was much in use for articles of dress, hangings, and coverings, and as bindings for the beautiful illuminated manuscripts of the monks. Many beautiful specimens of the craft have come down to us, and these may be seen in the museums of to-day.

The important point to notice in connection with the development of this art is that the treatment was in each case unique. Originality should be the aim of the work to-day.

Expenditure Not Prohibitive

The introduction of leatherwork into the schools may seem impracticable owing to the

cost of material and tools. Leather *can* be expensive, but where paper patterns are used, and care is taken in the spacing out and cutting of the leather for articles that are worth while, it will be found that a square foot of material can be made to go a long way. Every particle can be used for one purpose or another, and the products of the work have practical usefulness, so that they can generally be sold either to the individual children or at organized school sales.

Rexine or other leather substitutes can be employed, but are only suitable for use on certain articles.

Buying Leather in Bundles

One of the least expensive ways of obtaining the material is to purchase the bundles of brightly coloured leathers containing ten to twelve pieces, each approximately a foot square, which are procurable at a comparatively low rate, and which can readily be made the basis of much useful and interesting work.

Buying by the Skin

Where it is intended to purchase leathers by the skin, those known as "soft" leathers are the most suitable for use in the Junior School.

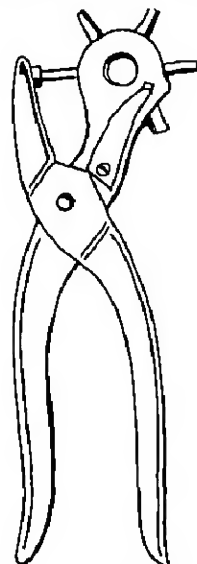
Brown Persian, which is a comparatively thin leather, is perhaps the least expensive, and can be obtained in skins varying from five to seven square feet in area. Half skins are usually supplied. It is obvious that this leather can be procured in only one colour.

Suede Sheep, which is thicker, can be obtained in a large variety of colours at a slightly higher price per square foot. The skins are somewhat larger than brown Persians.

Velvet Persians have a fine silky pile, and are admirable for making up small dainty articles. They are to be obtained in a variety of colours, the skins varying in size from five to seven square feet. Although these skins can be had with a good grain in addition to a good pile, their perfection is usually judged from the velvet side.

The "grain" side of a leather is the smooth side, while the "pile" is the velvet side

When choosing a skin it is better to select the small rather than the large, for as the animal grows its skin becomes coarser and it is also more liable to become damaged by pests or torn on fences, hedges, or rocks which may be in the neighbourhood of its pastures.



Punch Pliers

FIG. 1

A skin may show considerable variation in different parts; for example, the leather is more elastic in the direction of width, which is, of course, essential in order that the animal may breathe. Thongs, straps, etc., are therefore always cut in the direction of the length of the skin

Tools

Apart from the usual school tools such as scissors, knife, ruler, and hammer, the only tool necessary in the beginning, for Junior work, is the single punch or six-hole punch pliers. The six-

hole punch pliers are by far the best tool, as they not only give a variety of sizes in perforations, but can be used for other purposes than leatherwork. (See STENCILING, page 998.)

Thongs

The thongs used for joining the leathers together when making up articles can be either purchased or cut from the leathers in use. Those bought ready cut are usually cut from calf skins, and are to be obtained "natural" in colour, that is cream, or else a dark brown. The "natural" thongs can be stained to any colour, and this work in the Junior School should be done by the teacher.

To prepare the thongs from the skins in use

the simplest plan is to trim an oddment of leather into circular form with the scissors, and then cut the thong spirally toward the centre. The width of the thong varies with the size of the punch hole in use, and care must be taken to keep the edges as parallel as possible. If skins of various colours are in use the thongs can be cut from one in harmonious contrast to the work in hand.

Persian velvet thongs are not so strong as calf, and are used in only the earlier stages of the work where little strain is placed upon them.

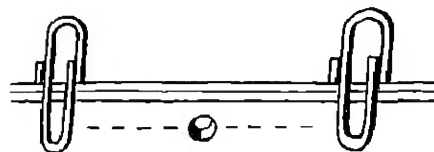
Before proceeding to the actual making of articles it will be better to describe the processes involved and suitable to Junior work.

Paper Patterns

Patterns should always be cut before commencing work upon the leather. The position of punch holes, designs, etc., should be indicated on the pattern, so that errors may be corrected before proceeding too far. The pattern is placed upon the leather to act as a guide when cutting out, while measurements and the positions of designs can be transferred by piercing the paper with a sharp-pointed pencil

Thonging

To join two pieces of leather together at the edges it is necessary to first pierce a number of



Method of securing leather

FIG. 2

holes equidistant from each other and from these edges. The distance between two holes and between each hole and the edge should be about a quarter of an inch. A line should be drawn upon the paper to act as a guide, and points marked off upon it about a quarter of an inch apart. These points represent the centres

of the punch holes, and should be transferred to one of the pieces of leather. To keep the two edges of the leather together and in place whilst punching, it is best to secure them by means of small clips or paper fasteners. It is always as well to allow some practice in punching upon the paper pattern before proceeding to the leather. Be careful to see that the centre of the punch coincides with the points marked on the leather.

When punching paper or leather a piece of thin card or scrap leather should be placed between the lower jaw of the pliers and the work. This will help the pliers to bite right through the material, and will ensure a clean cut. The measurements for the spacing of the holes and their distance from the edge of the leather are actually governed by the type of stitch to be used, but a quarter of an inch is suitable for the two stitches described below

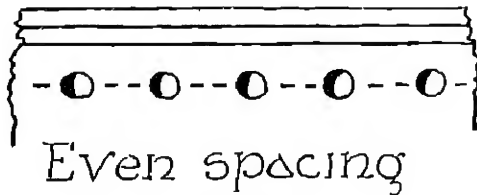


FIG 3

Thonging Stitches

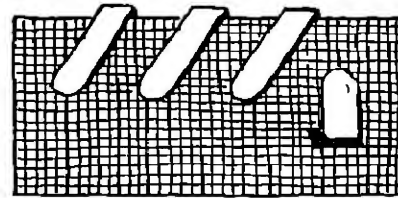
There are quite a number of stitches employed in leatherwork, but the most suitable two for Junior work are the "single whip" and the running stitch. In single whipping the stitch is the same as plain oversewing, that is to say, the thong is threaded from the front, back over the edge, and through the front again. In the running stitch the thong is taken down through one hole and up through the next. Care must be taken in making the stitches not to draw the thong too tightly or a puckered appearance will result.

To prepare the thong for threading, cut one end to a point with the scissors. Carefully dip this point in seccotine, and allow it to dry. This will produce a firmness which will make lacing much easier. Thonging well done is a decoration in itself, and careful attention should be paid

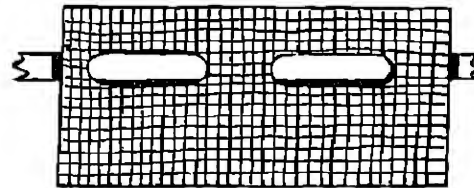
to the neatness and accuracy with which it is done.

Joining a Thong

There are times when the thong proves too short for the lacing to be done, and it is necessary to join a new piece on. The neatest way of doing this is to insert the end of the new piece between the two edges of the leather. This is done while there is enough left of the first thong to thread over it for about four holes. The first thong is then taken through one leather only,



Whip stitch



Running stitch

FIG. 4

and sandwiched between the leathers, while the second thong is brought through one leather and the thonging continued. The ends of the thongs are thus firmly gripped, and the join presents a neat appearance.

Structural Design

Form, use, and decorative quality should always be carefully considered, even in the early stages of the work. Exaggeration and freakishness should be avoided, it must be remembered that the component parts of an article should form a beautiful and consistent whole. Much can

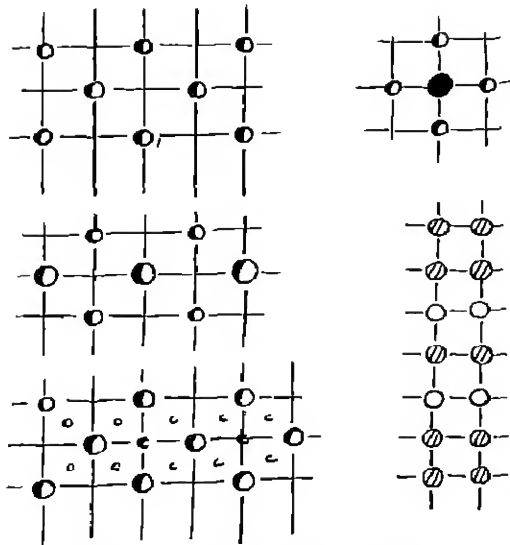
be done with paper and scissors to develop new shapes after the child has once grasped the essential qualities inherent in any particular article. New forms of attachment, new fastenings, new forms of handles or straps may also be evolved, and each have its peculiarities developed to the utmost. It is in this way that the art will find its scope; more than this, it is in striving continually in this selective direction that whatever artistic powers the child may possess will be developed to the full.

Decorative Design

Although the surface decoration of the article is a secondary consideration, it must always be planned in conjunction with structural design.

Punched Patterns

A great variety of pleasing designs can be formed by means of the punch by varying the spacing, grouping, and size of the holes. The patterns should first be worked out on squared paper and then transferred to the leather. By saving the discs cut from various leathers, and inserting them into holes punched in leather of



Punched Pattern

FIG. 5

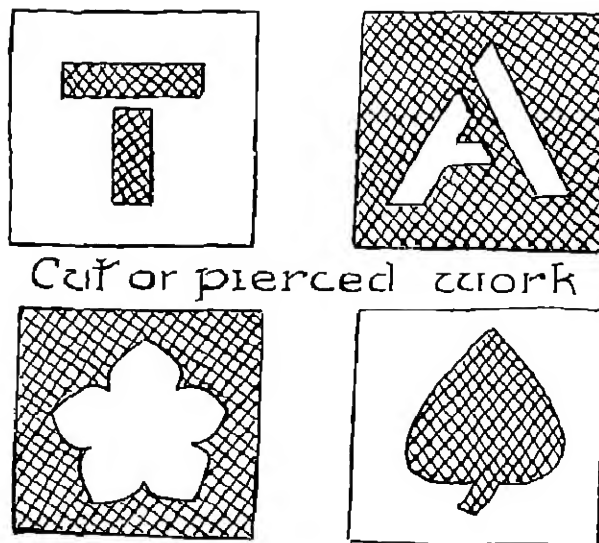
a contrasting shade, many colour schemes can be produced. The discs can be held in place with a little adhesive, or they can be backed with small squares cut from scrap leather of the same colour as the article. Patterns can also be formed by lacing thongs through the holes, the ends of the thongs being fastened down at the back of the leather with a little adhesive.

Appliqué

This form of decoration is very suitable for larger articles, such as bags, book-covers, pochettes, etc., and if a simple but bold design is selected the results are very pleasing. Flowers, butterflies, animals, or initials are cut in the leather. Paste is then applied and the decoration firmly pressed into position on the leather to be decorated. The edges may be left plain or stitched with silk.

Pierced Leather Work

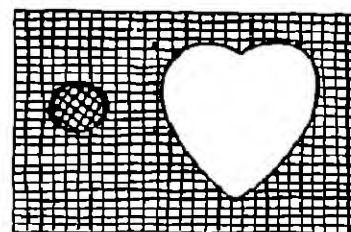
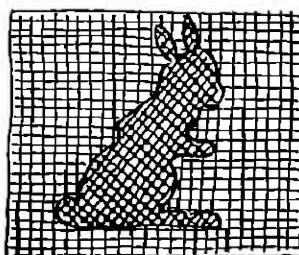
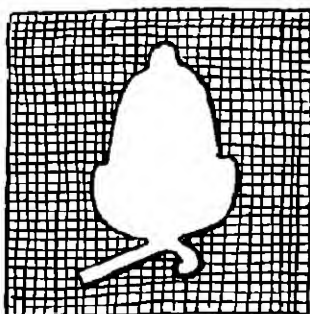
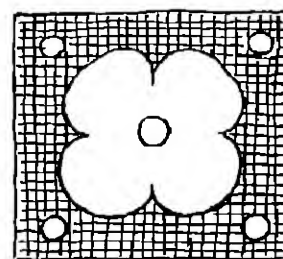
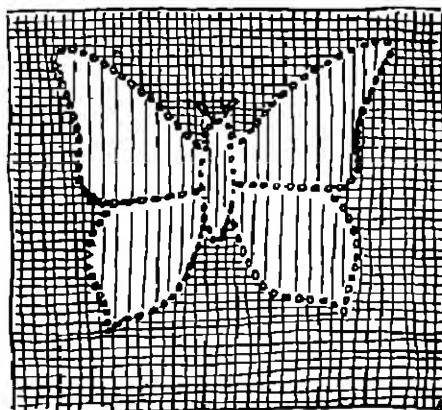
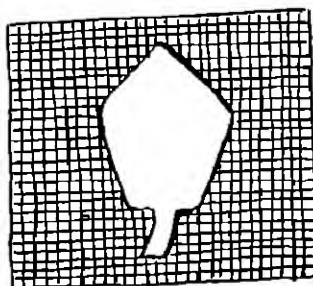
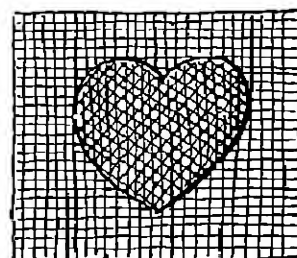
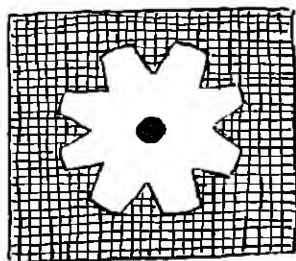
This consists in cutting out a design from one leather as for a stencil; a second leather is then pasted on the back so that it is seen through the apertures. This form of decoration is very



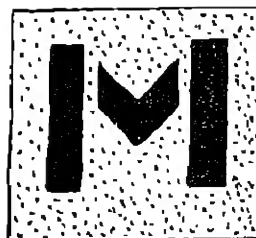
Cut or pierced work

FIG. 6

Appliqué



Pierced Work



The Monogram

FIG. 7
Appliqué Work and a Pierced Monogram

effective where leathers of different colours are used. The pattern is first traced on the face of the leather by interposing a piece of carbon paper between the paper pattern and the leather. The lines of the design are then traced over with a hard pencil. The portion of the pattern through

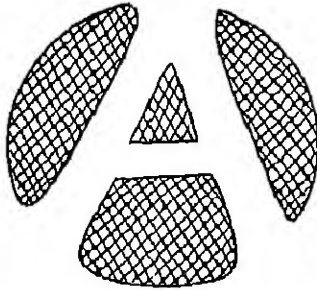


FIG. 8

Pierced Work: the Monogram A

which the background is to show is then cut away with a very sharp-pointed knife. In doing this, care should be taken to see that the leather is cut right through. Should a piece not be completely severed it is useless to attempt to tear it away, as the leather will be distorted and



FIG. 9

Pierced Work: the Monogram M

the work spoiled. Always work from the centre of the design outward.

When the cutting is finished, turn the pierced leather face downward, and give the back a thin coat of paste. Then carefully lay the background leather face downward on top of it, and press the two together with the flat of the hand.

Punches made by Filing Nail-heads

A number of very effective punches for impressing designs can be made by filing the heads

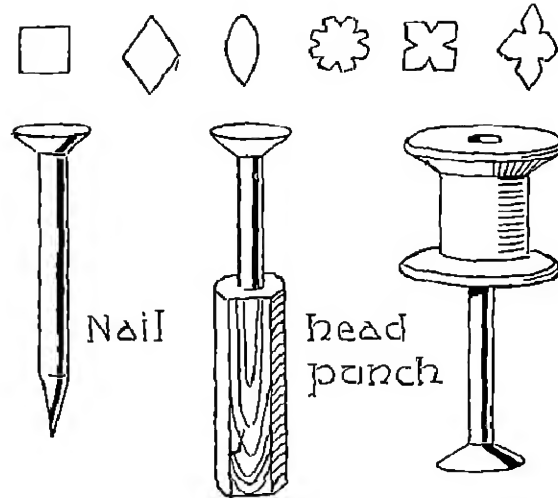


FIG. 10

of fairly large nails. Squares and diamond shapes are easily formed, but a little more care will be required for simple leaf shapes. The circular head of a nail with four small notches, equally spaced, round the circumference, produces quite a pretty little flower form.

Use of Punches in Decoration

If the leather is placed with the grain side upward upon a piece of strawboard, and a smart blow is given to the punch with a hammer, a

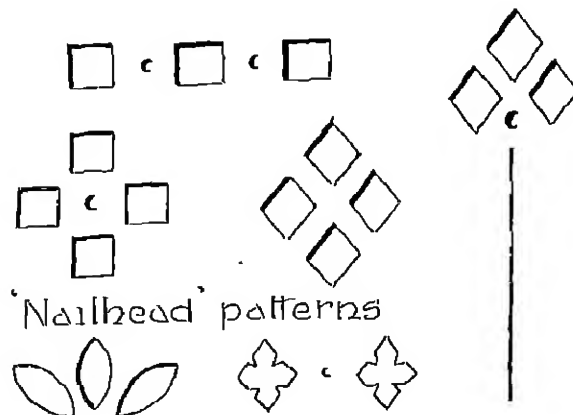


FIG. 11

lasting impression of the pattern of the punch will remain in the leather. The nails can also be fixed in cotton reels or inserted in small

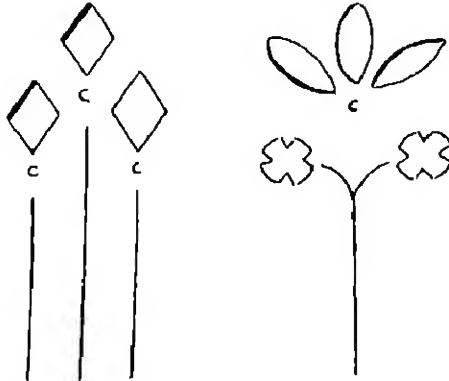


FIG. 12
Nailhead Pattern

wooden handles and used as tools. In this case they are slightly warmed near a gas jet, and an impression gained by hand pressure only. The punch impressions when used in conjunction with small lines made by a blunt tool, such as a steel knitting needle, can be grouped and arranged to form a large number of pleasing designs.

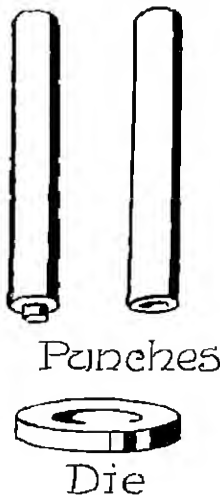


FIG. 13

Fitting Press Buttons

There are times when the press button makes a very useful form of fastening. There are four parts to a press button: the cap or button; the cap eyelet; the spring; and the spring eyelet. To fit a button to the flap of a bag, first determine the position of the cap and prick a hole through the leather by means of a pin. This will mark the centre of the button. Next set the flap true with the sides and bottom of the bag,

and push the pin straight through the hole into the front of the bag. This marks the centre of the spring. Before punching the holes for the fittings, mark the leather lightly with the cutting edge of the punch. Remove the punch and see whether the pinhole is in the centre of the ring made by the punch mark. Correct if necessary and punch through. In soft leathers it is advisable to make the hole a little smaller than required, as this helps to bind the fitting. The cap eyelet will require a larger hole than the spring eyelet. A special tool, the press-stud punch, is sold for fixing the fittings in place. Put the cap upside down in the hollow of the brass die, and

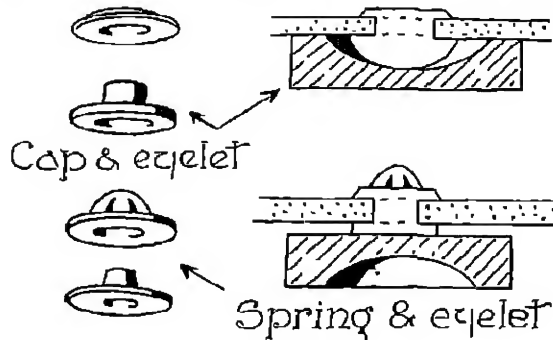


FIG. 14

lay it on the desk. Push the cap eyelet through the hole in the flap from the underside. Reverse the flap so that the underside is uppermost, and place the protruding rim of the eyelet in the reversed cap. Insert the pointed, or "positive," punch in the hole of the eyelet, and with a smart blow from a hammer drive the two parts of the cap together.

Now insert the spring cap eyelet from the inside of the bag and place the flat side of the die under the eyelet. Put the spring under the projecting part of the eyelet, and with the hollow or "negative" punch clench the two parts together as before. Should the spring require regulating, squeeze it with a pair of pliers to loosen or tap it gently with a hammer to tighten the grip.

Tassels

There are always uses, both structural and ornamental, to which small tassels can be put. An ordinary tassel is made from an oblong piece

of leather, fringed with the scissors to within a quarter of an inch of the top edge. A little seccotine or paste is rubbed on the smooth side of the uncut portion, and the leather rolled round two or more thongs. The end of the leather is pressed down firmly with adhesive, and held in the fingers until it sets.

Another form of tassel is made by tying a knot about four inches from the end of a thong, and

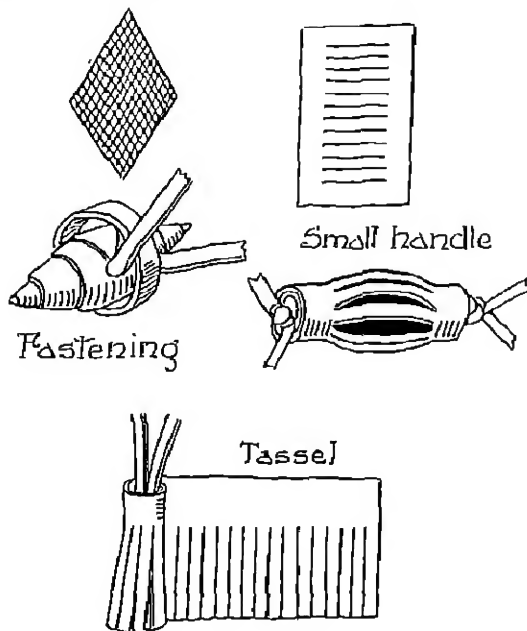


FIG. 15

threading wooden beads on the short end, each bead being separated by a knot. This can be varied by tying two or three thongs together, and threading beads on the separate ends, or threading one bead on each thong, passing the whole of the thongs through one large bead, and completing the tassel by threading small beads on each of the thongs again.

A Leather Fastening

A simple fastening can be made by cutting a piece of leather to the shape of a diamond, pasting the grain side, and rolling it in the same way as with the tassel. When set a hole is punched through the centre of the roll to take

a thong. One method of attaching the thong is to fold it in two, place the roll in the fold, and bring the two ends of the thong back in through the hole, so that they emerge one on each side of the fold. The loose ends of the thong are fastened to the article. To complete the fastening a loop of leather or thong is placed in such a position on the article that the roll can pass through it.

Handles for Bags

A simple and effective handle can be made by cutting two pieces of different coloured leathers to the required length and about one inch wide.

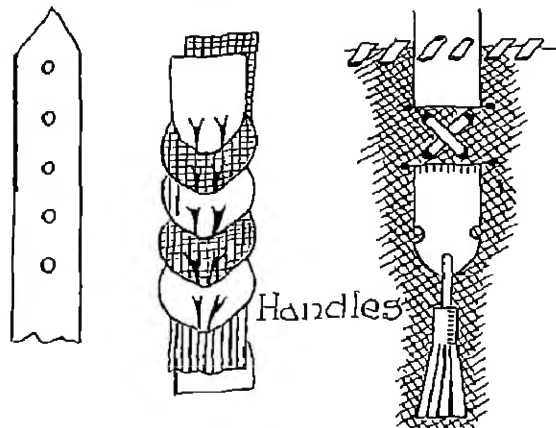


FIG. 16

Using the large nib of the punch pliers, holes are punched down the middle of these two pieces about one inch apart. One end of each piece is cut to form a point for insertion through the holes. The pieces are then inserted alternately through each other by means of the holes, and pulled up tight. Care should be taken that the creases formed should lie evenly along the handle. The ends can either be straightened off and thonged on to the bag, or may be slit up and used as thongs for lacing the handle in.

A handle of the "pull cord" type is formed by first punching two sets of holes, one below the other, near the top edge and through both sides of the bag, and cutting from one to the other to form slits through which to thread the handle. Two pieces of leather of sufficient length and

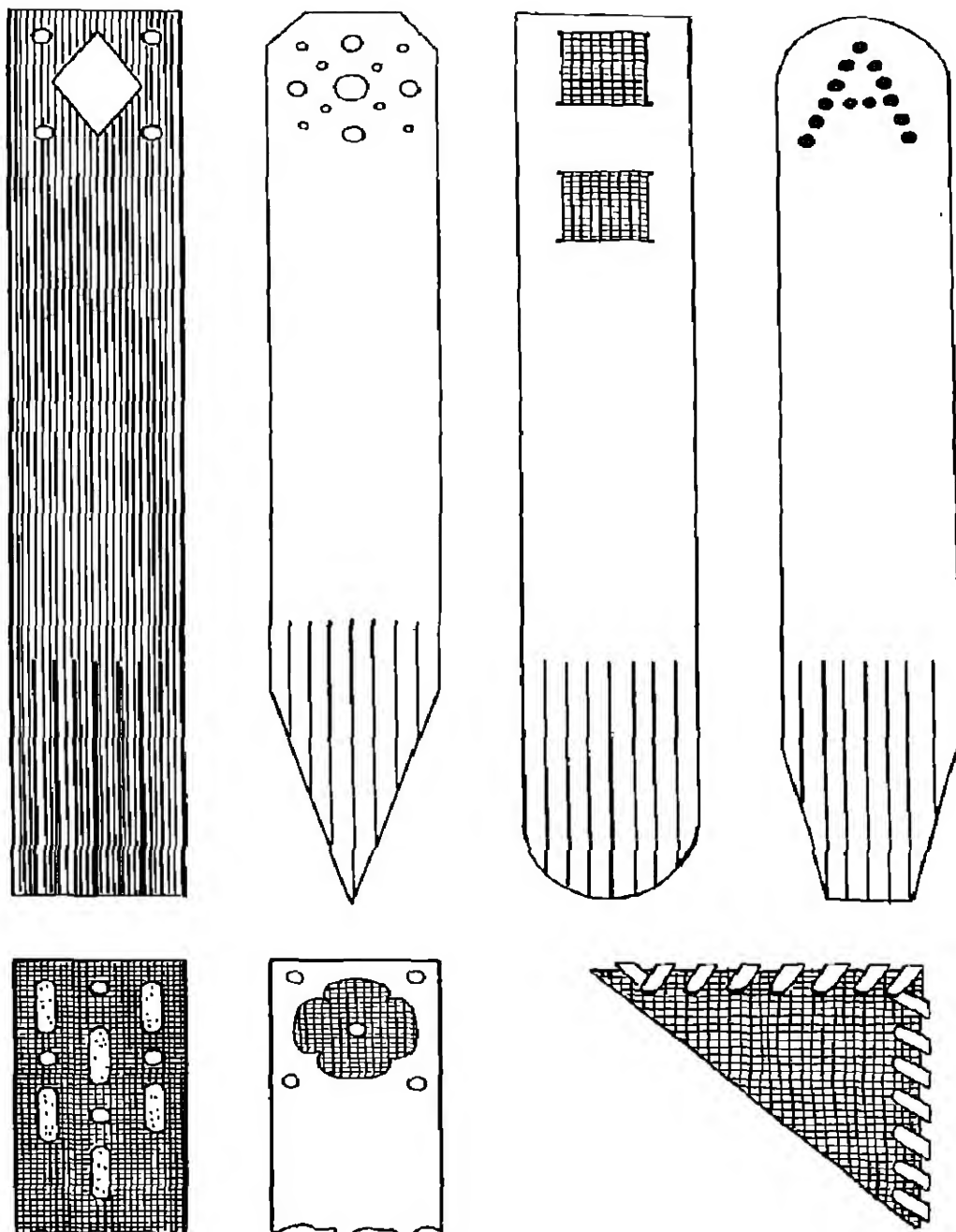


FIG. 17
Book-marks

about an inch in width are cut and threaded through the slits, the one piece from right to left and the other from left to right, completely round the bag. The ends of the leathers are then tied firmly in a knot a short distance from their ends, and the leather cut from the end to the knot on each of the four pieces. The smaller thongs thus produced are decorated with beads.

When inserting vertical handles it is always advisable to cut a number of slits in the sides of the bag, of a width equal to the handles. These slits should be spaced one below the other at a distance equal to the width of the handle. The handle is made long enough to be carried through the slits, coming to the front at the lower one. The end of the handle should be pulled through to a sufficient length to be fringed or to be shaped to receive a tassel. The portions of the handle appearing on the outside of the bag are decoratively thonged to the bag.

Radiating Strip Handle

Several strips of leather, tapering from half an inch to one quarter of an inch, and a large ivory ring are required to make this handle. The narrow end of each strip is taken through the ring, and brought into contact with the back of the strip, and made fast with adhesive. A hole is punched through the two pieces, which are then made secure by folding a thong round them, passing the ends through the hole from the front, and tying them over the thong at the back. To fasten the large ends of the strips to the bag the same method is employed as prescribed for vertical handles. Metal, cane, or wooden rings, if used, should be covered with leather. This is done by winding a narrow strip round them and fastening off the ends by neatly stitching them together.

A Woven Handle

The materials required will be a length of stout cord, such as is commonly used for clothes line, and a number of thongs. The thongs are laid edge to edge right round one end of the cord and made fast with a strong thread. If this end be suspended the thongs will hang parallel and entirely cover the cord. An additional thong is taken, and, beginning at the bound end, is

wrapped round and round the cord, at the same time being woven over and under the alternate parallel thongs. Care should be taken to keep the thongs attached to the cord quite parallel and straight, and the wrapping or weaving should be tightened up with every round. The weaving finished, the end must be made secure as at the beginning.

To fasten the handle to the bag a tab is used. This should consist of a piece of leather capable of being wound round the end of the handle and firmly stitched, and having a suitably shaped extension which can be decoratively thonged to the bag.

Adhesives

The best adhesives for use with soft leathers are those which are supplied in paste form. They are clean in their use, and can easily be removed from the leather when accidents occur. The stain should be removed with a little warm water and a clean rag, and when the leather is thoroughly clean and dry the pile is restored by careful rubbing with the edge of a pen-knife.

Creases may be removed from soft leathers by passing over a moderately warm iron held upside down.

Elementary Exercises

The first exercises should consist of articles in which simple shapes can be easily developed, and to which simple types of pattern can be applied.

Book-marks

The book-mark lends itself admirably to this purpose. The length of a book-mark is more or less definite, so the first problem consists in finding a suitable and proportionate width. Experiments should be made with the paper patterns until a satisfactory result has been obtained. Now comes the problem of suitable decoration. In the first instance this can be confined to a fringe at the one end, and a simple *appliqué* shape, such as a square or diamond, at the other. This *appliqué* pattern can be balanced by holes punched through the leather at a short distance from its edge. In cutting the

fringe, guide lines for the scissors should be marked on the grain side of the leather with a pencil and ruler. Clean cutting should be encouraged, as snipping produces ragged edges in the leather.

A development in shape can be brought about by cutting a small piece off the top corners and by trimming the lower edge to form a "V" shaped fringe.

A new idea is introduced by constructing the marker from a square piece of leather. This is

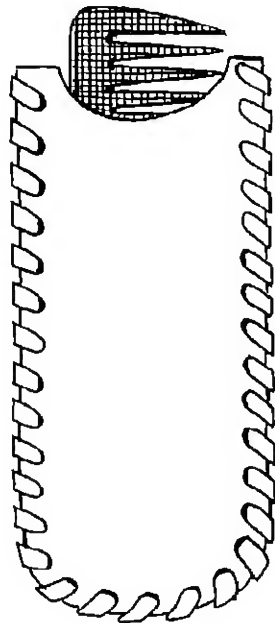


FIG. 18
Comb Case

folded across one of its diagonals and cut so as to form two triangular shapes. These are placed together and held firmly by paper clips while a series of holes are punched along the short sides of the triangle. These edges are then thonged. To commence, the thong is taken from the inside through the first hole of one leather only, until half an inch of it is left. This half inch is given a touch of paste and sandwiched in between the edges of the leathers so that it is gripped fast as the thonging proceeds. The long end of the leather is then taken right through

the first hole, and continued through the other holes until the last hole is reached. To finish off, the end of the thong is threaded through a ring needle and inserted between the edges of the leather for the length of two or three stitches. It is then pulled in firmly and cut off. In thonging, the grain side of the leather should be upper-

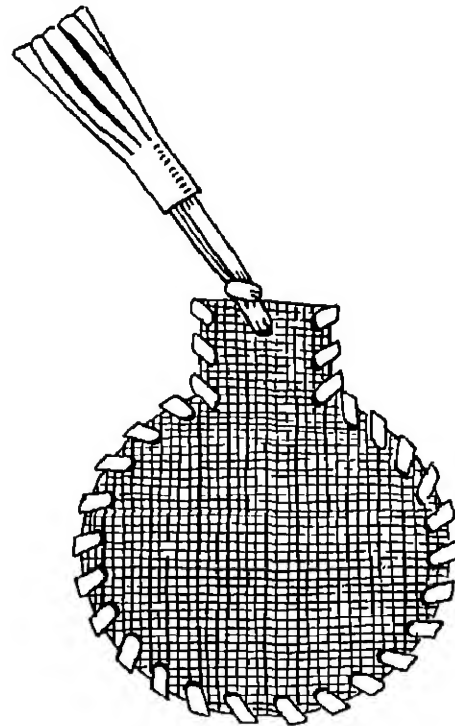


FIG. 19
Spectacle Cleaners

most, so that it forms a contrast to the pile of the marker. (See Fig. 17.)

A Small Comb Case

This can be made from two strips of leather, each of them slightly rounded at one end, and having a hollow cut in the other. The edges of the leathers are thonged together, the running or the whip stitch being used. The ornamentation can be either punched, laced, or *appliqué* patterns.

The addition of a flap will bring about a new development in the shape, and one of the pieces of leather must be longer to allow for it. The small leather fastening previously described can be added to make the case secure.

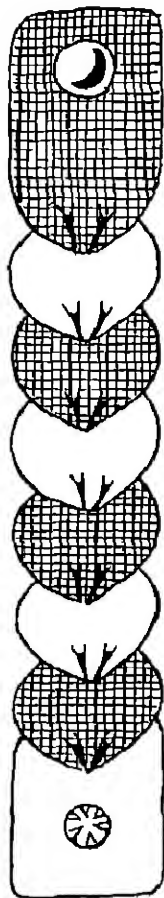


FIG. 20

• Serviette Ring

This can be made by threading two strips of leather through each other in the manner described under the heading *Handles*. Equally spaced holes are punched down the middle of the strips, and the alternate leathers are threaded through them. Where the strips are of the same coloured leather, variety can be obtained by using one with the pile side uppermost and the other with the grain. When finished the ends are cut off straight and fastened together by means of a press button.

A Needle Case

This can be made from a piece of leather 6 in. by 4 in., and a strip 7 in. long and half an inch

wide. In making the paper pattern, two lines are drawn across the long way of the paper $\frac{1}{4}$ in. above and below the middle respectively, and four points are marked upon each. Two of these points are 1 in. from each outer edge and two 1 in. from the middle of the paper. When these points have been transferred to the leather they form the centres for punched holes, which are to be the ends of slots cut across from line to line. After the edge of the case has been thonged it is folded with the pile side inward, and the narrow strip is threaded through the slots provided and fitted with a press button to form a fastening.

To secure the pieces of flannel necessary for holding the needles, they are folded like the

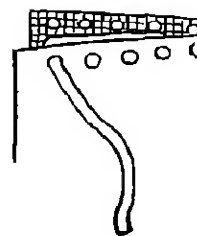


FIG. 21

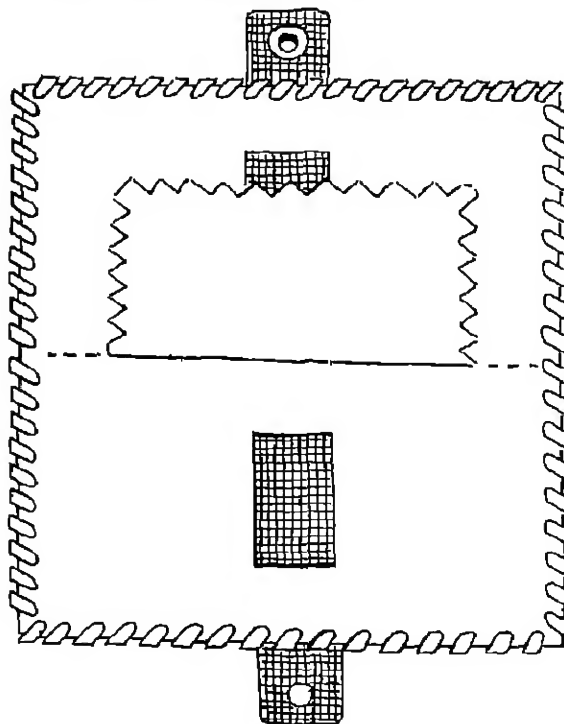


FIG. 22

Needle Case

case, and a hole is punched through them and the leather $\frac{1}{2}$ in. above and below the middle of the fold. The ends of a thong are threaded through the holes from the inside of the case, the thong being tied on the outside, and the ends decorated with beads or a tassel.

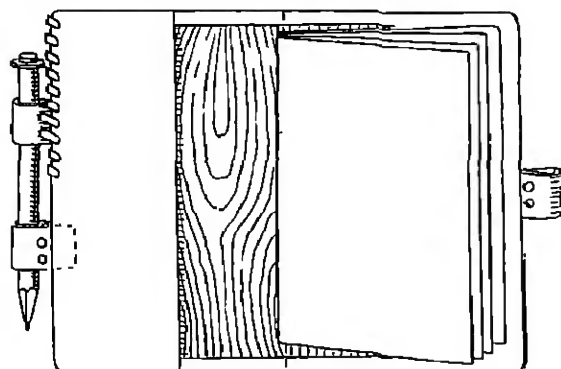


FIG. 23
Notebook Cover

Further Suggestions for Beginners

Other articles which lend themselves to the development of shape and are suitable for beginners are: scissor cases, small bags and pochettes, small purses, notebook covers (after the style of the needle case), knife cases, small calendars, mats, match-box cases, pencil and knitting-needle holders, small book jackets, handkerchief sachets, and manicule sets.

There is much scope for decoration in the articles enumerated. This should be simple and to the purpose.

Intermediate Projects

The following is a list of leather articles suitable for the intermediate stages of Junior work.

Notebook Cover

This is made from three large pieces of leather and three small pieces. One of the large pieces is 6 in. by 5 in., and the other two are 2 in. by 5 in. The three smaller pieces are 2 in. long by $\frac{1}{2}$ in. wide. All decoration should be applied before making up. In making up, the largest piece of leather is folded across the long way

and creased to find the middle. It is then opened and the two large pieces are placed over it, one to the left and the other to the right, so that the outside edges coincide. After the edges have been fastened together with paper clips the corners are rounded. The small pieces of leather are then folded and inserted between the edges of the larger, one in the middle of the right-hand outside edges, and the other two half an inch above and below the middle point on the left. These small pieces form loops for a pencil to pass through, and so fasten the covers. In thonging, two sets of holes must be punched through the loops to allow the thong to pass along the edge.

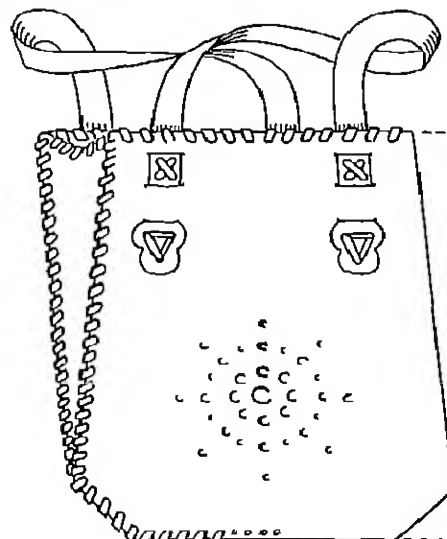


FIG. 24
Shaped Bag

A Small Bag

The leather necessary for this is two pieces 8 in. long and 6 in. wide. One inch is measured vertically and horizontally from the lower corners and cut away to that extent. Half an inch is measured inward from the upper corners and lines are drawn from these to the upper extremities of the lower corners. The leathers are cut along these lines, thus giving a new shape to the bag. Two gussets will be required, each 7 in. long and 2 in. wide at the top. These gussets

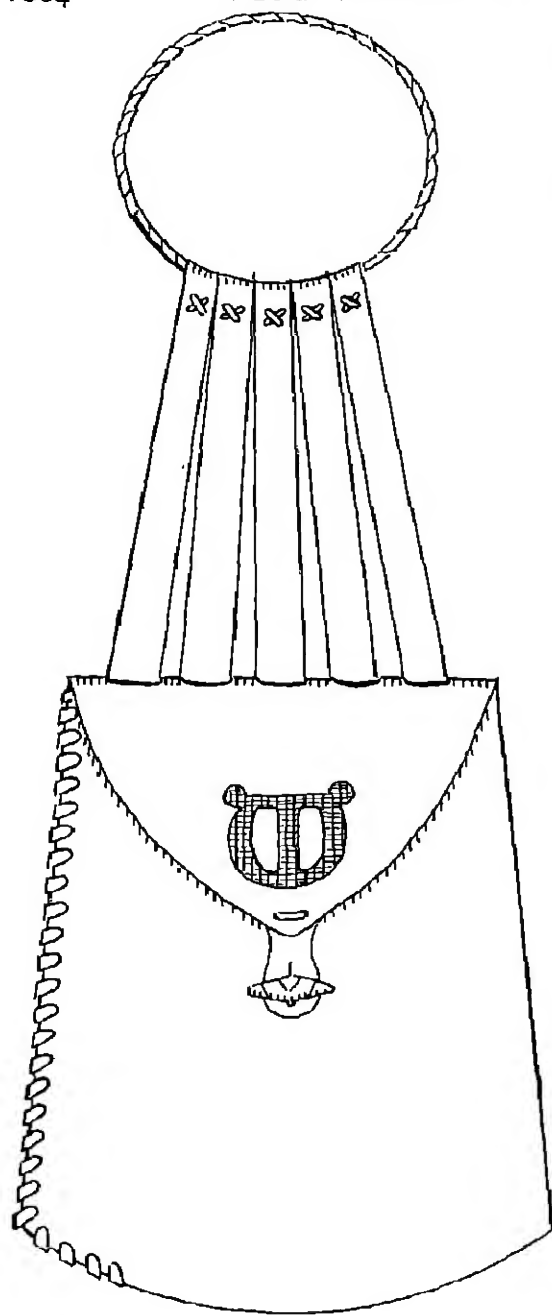


FIG. 25
Safety Bag

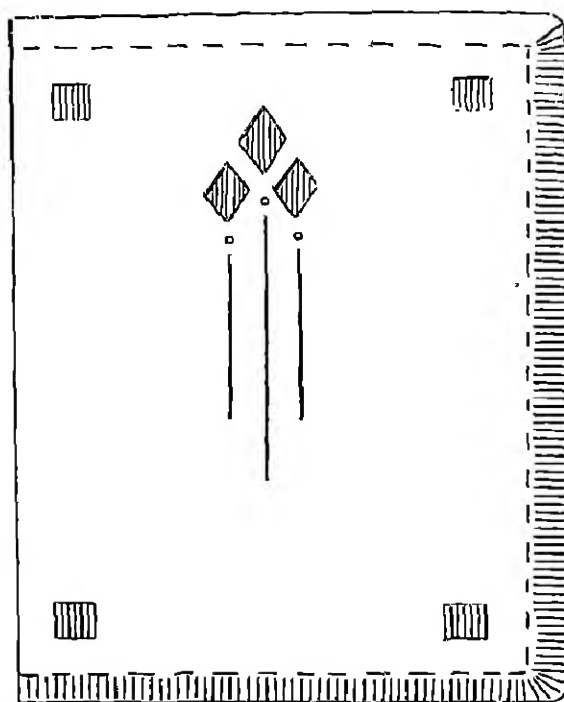


FIG. 26
*Mounted Book
Cover*

'Yapp' edges

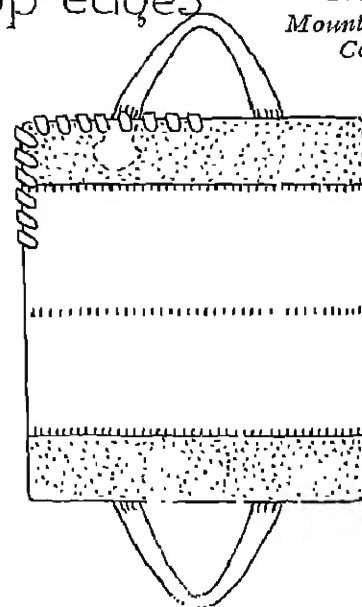


FIG. 27
Book Carrier

tape to a point. Vertical type handles are inserted as described previously. The *thonging* is started in the middle of the top edge of each leather separately, and continued down each side to attach one edge of the gusset; along the lower edge of the bag the two pieces are joined with one thong.

A Safety Bag

This bag is cut out to a similar shape (or it can be varied) to the small bag, but without the gussets and with the addition of a flap. In this bag the radiating strip handle is used but the lower ends of the strips, instead of being fastened to the back of the bag, are secured to the inside of the front, and pass through slots provided for them in the crease of the flap. The flap can be secured by means of press studs or small leather fasteners. Both the shape and method of attachment of the handle can be developed to a great extent.

A Mounted Book Cover

This type of cover when finished is secured to the already existing covers of a book, whether of linen or paper, by means of strong adhesive. The leather is cut about a quarter of an inch larger than the book on all sides, so that the edges can be bent over and form what is known as a "Yapp" finish. The principal work in this exercise consists in the creation of a pattern suitable to the cover. Most of this is done before the cover is fixed to the book. Punched patterns, in which the coloured "confetti" is used for filling in, *appliqué* patterns indicative of the subject-matter of the book, and laced borders formed with thongs can each be used. Patterns formed by tooling with nail-head punches are very applicable, and should be done after the cover is fixed to the book.

Further Suggestions for Intermediate Work

Other exercises suitable to this stage are note-cases containing one or two divisions, and introducing small gussets, slip-on book covers which can be converted to book carriers by the addition of handles, cases with handles for holding

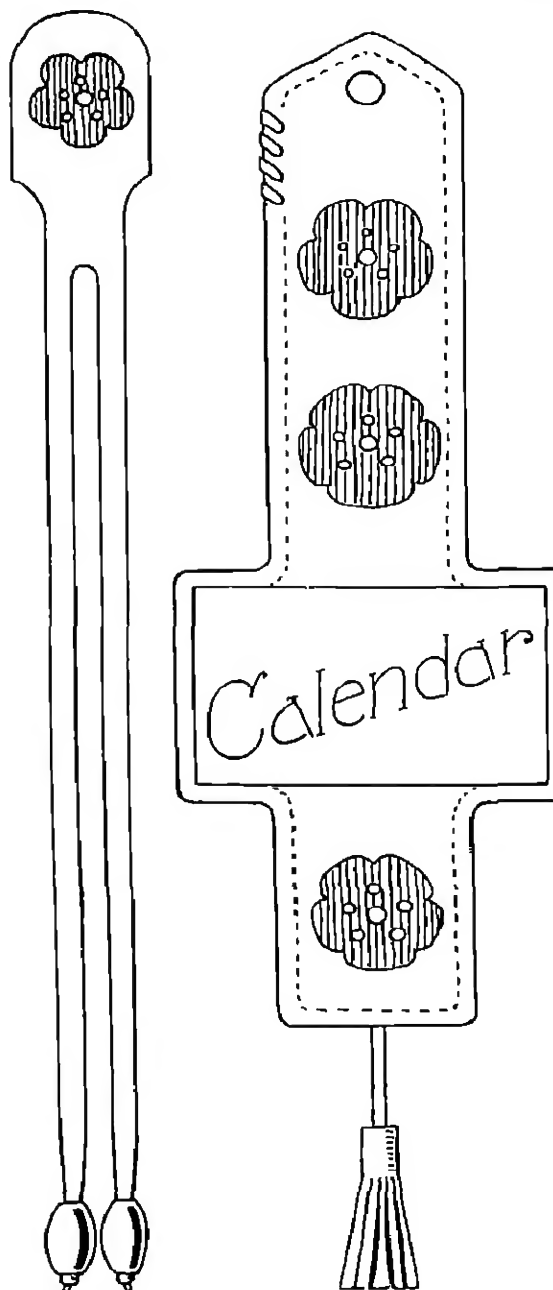


FIG. 28
Book-mark and Calendar for Intermediate Stage

Prayer or Hymn Books, pochettes (gussets introduced), vanity bags (pull-cord type), other simple bags introducing new forms of handles and methods of fastening, collar cases, having a circular base thonged to a broad band of leather, and finished with a pull-cord handle, handkerchief sachets, purses, more elaborate book-marks, table centres, etc.

Advanced Work for Juniors

Though the difficulties arising from over-large classes may mean fairly slow progress for the bulk of the children, there are always some capable of more rapid advancement. In such a craft as leatherwork this individual progress

is essential. The first should be $\frac{1}{2}$ in. greater in diameter than the mirror, the second being the same size but with the centre cut out to within $\frac{1}{4}$ in. of the edge. The third is a piece $\frac{1}{2}$ in. wide, and of sufficient length to equal the distance round the outer edge of the leather discs. This is for binding before thonging. The back, or solid disc, is decorated before being attached to the mirror by means of an adhesive. The ring of leather is pasted and laid over the face of the mirror so that the edges coincide with the edges of the back. The narrow strip of leather is pasted and placed over the edges of the circular pieces so that half the width goes to the back and half to the front. The edges are then punched and thonged.

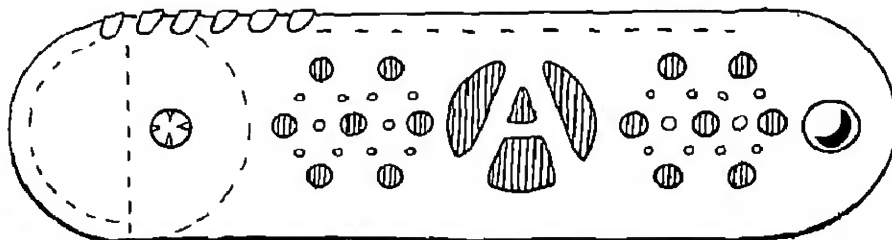


FIG. 29
Serviette Ring

may well be encouraged. Even if the majority of the upper classes in the Junior School cannot get beyond the intermediate projects suggested, it is advisable to let those who are keen and capable proceed to more advanced work.

Serviette Ring

This is made from two pieces of leather of different colours, $5\frac{1}{2}$ in. long and $1\frac{1}{2}$ in. wide. The ends are rounded off, and the pattern consists of a central pierced or cut monogram flanked on either side by punched designs, through which the colour of the background shows. The two leathers are thonged together round the edges, and finished off with a press button fastening.

Covering a Small Circular Mirror

Three pieces of leather will be required for the

A Blotter

Two pieces of fairly thick cardboard are cut to the required size and laid upon the leather, so that the two adjacent edges are parallel and about 1 in. apart. The leather is cut 1 in. each way larger than the rectangle thus occupied by the boards. Pierced or punched patterning must be done before the leather is pasted on the boards. The boards should be pasted on one side and laid carefully in position, and then rubbed down. To prepare the corners for folding, turn the cover so that the boards are uppermost. Between the corner of the leather and the corner of the board mark a point. The distance of this point from the corner of the board is equal to the thickness of the board. Through this draw a line at an angle of 45 degrees to both edges of the board. Cut off the triangular piece of leather thus formed. Repeat at each corner in turn. Paste the inside of both

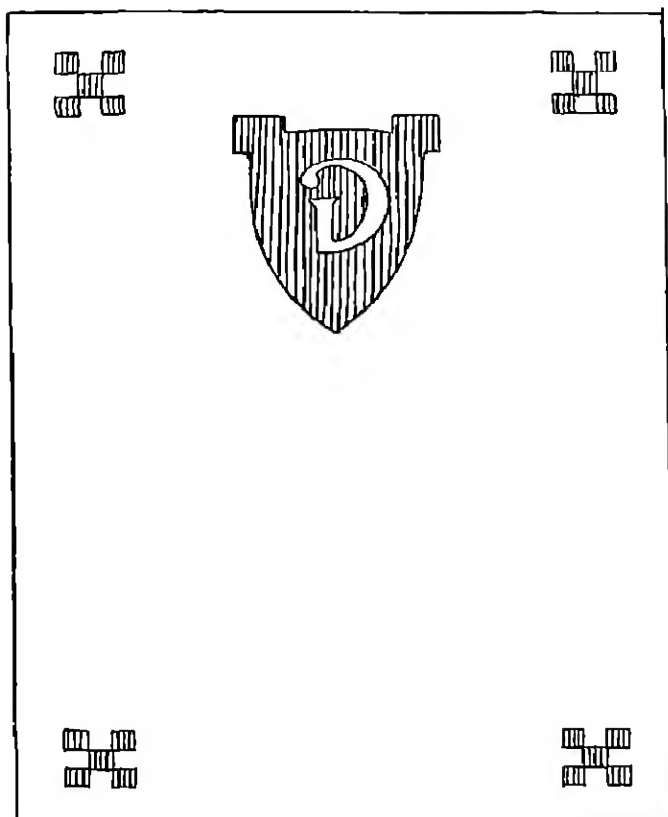
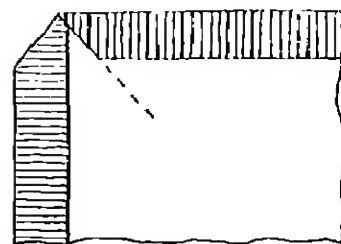
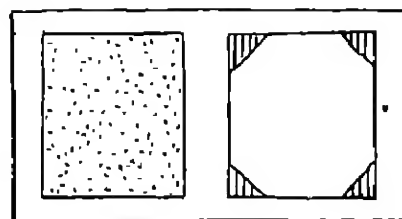


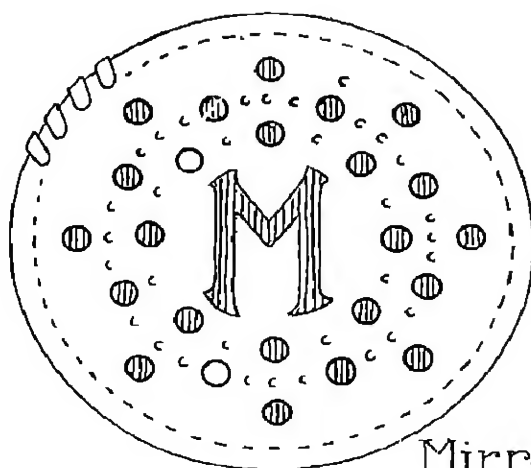
FIG. 30



Cornering

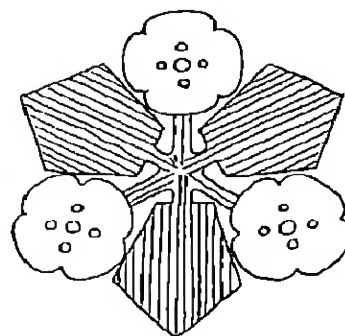


Blotter



Mirror

FIG. 31



boards about 1 in. down from the top edge and pull the leather over, rubbing it down thoroughly. Repeat at the bottom. It will be found that the leather at the top and bottom edges projects a little beyond the side edges. Press these projections well down so that they cover the corners of the boards; then paste the boards at the sides and pull the leather over as on the top and bottom edges. If this procedure has been properly carried out the corners will be square and completely covered, the leather

being joined at 45 degrees to the top and side edges. It now remains to cover that portion of the outer cover which is still visible between the two adjacent edges of the boards. Cut a strip 3 in. wide and a little shorter than the height of the cover, and paste it to the inside of the back, rubbing well down, so that it adheres to both the leather and the boards. The insides of the boards are now covered with suitably coloured paper, and the blotting paper is secured by punching and lacing through the back of

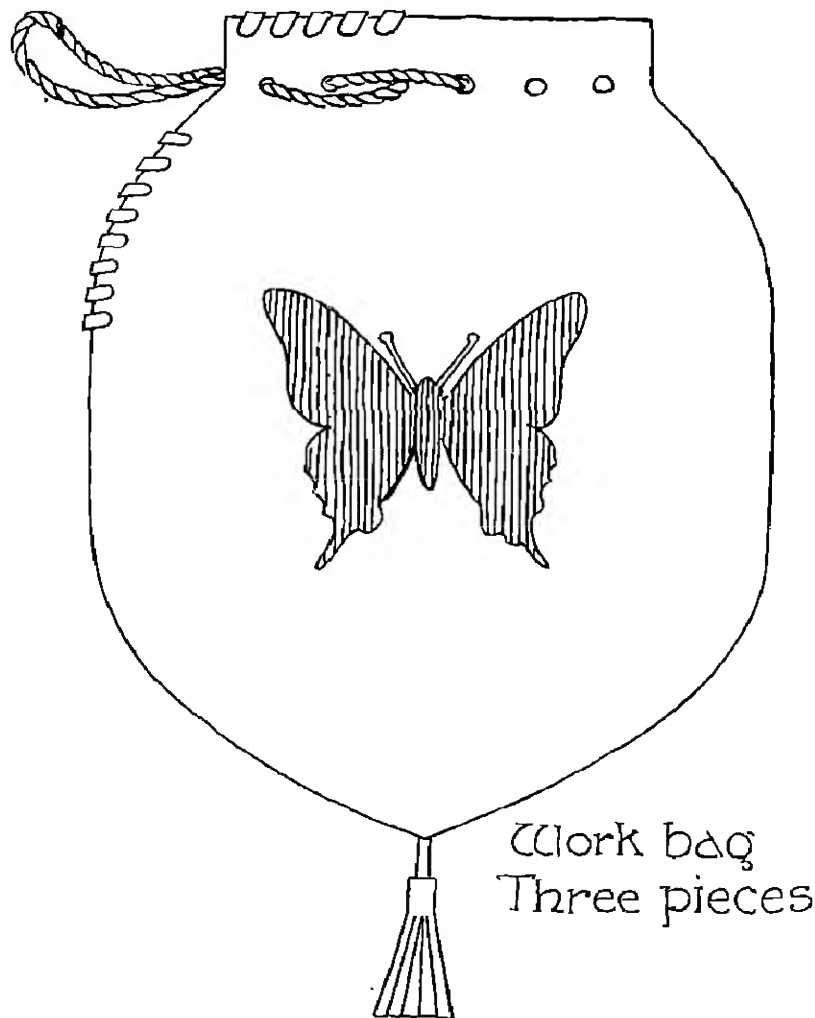


FIG. 32

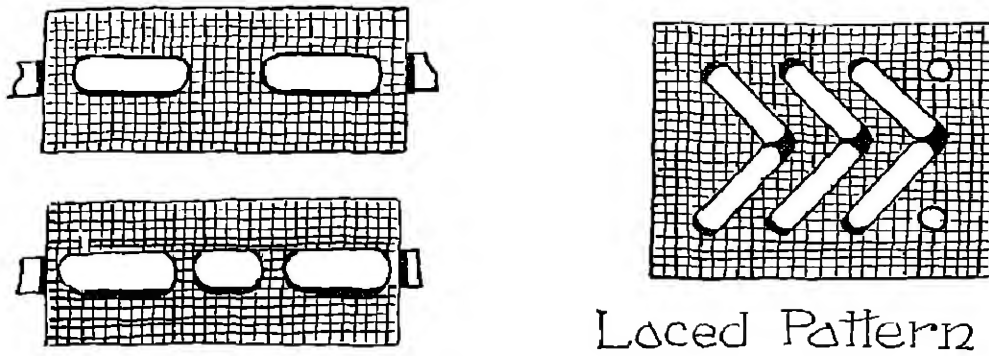


FIG. 33
Thonging Patterns

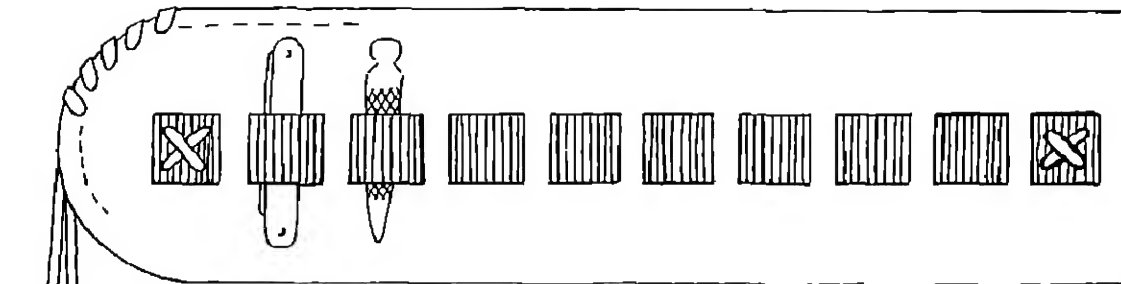


FIG. 34. *Manicure Case*

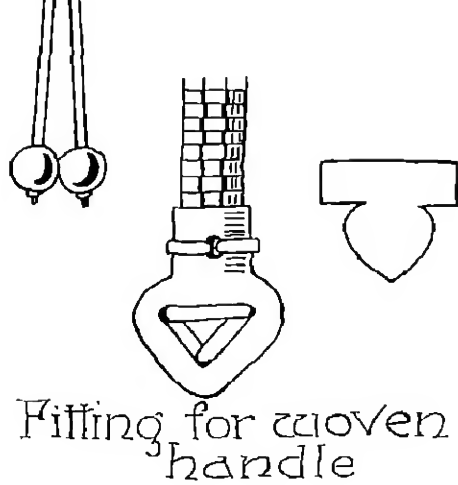


FIG. 35

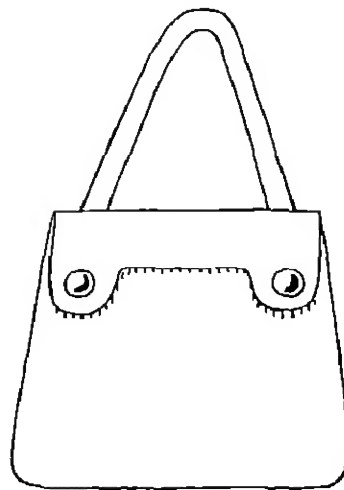


FIG. 36
Bag with Handle Attached

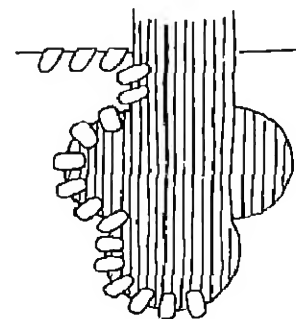
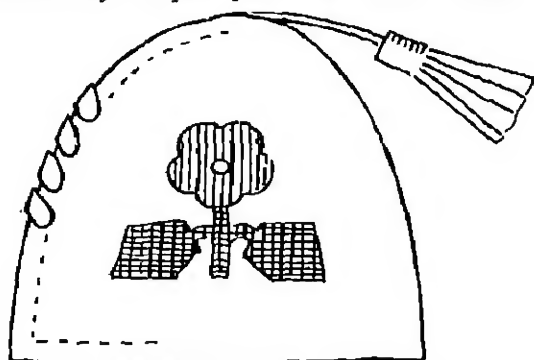


FIG. 37
Attaching Handle to Bag

the cover, or by a thong taken through the middle of the folded paper and tight round the cover, the ends being decoratively fastened

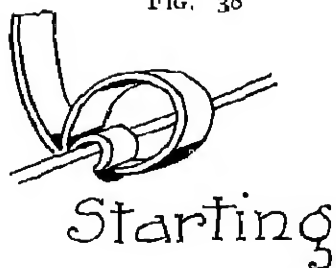
Further Suggestions for Advanced Junior Work. Other examples suitable for this stage are: ladies' workbags formed of four or more decoratively shaped pieces of leather, larger

bags with plaited or woven handles, purses having gusseted divisions, book-carriers, tobacco pouches designed to hold a rubber lining, manicure sets in roll form, camera cases, snapshot album covers, brush cases, fountain-pen cases, table mats, tea cosies, and chair-back strips.

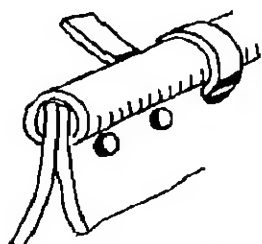


Egg Cosy

FIG. 38

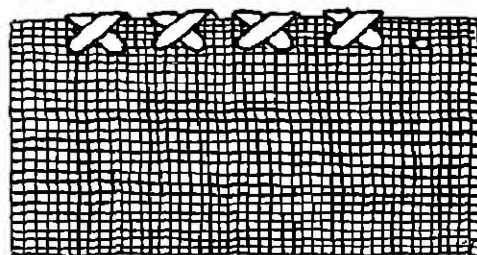


Starting



Binding

FIG. 40



Cross-stitch

FIG. 39

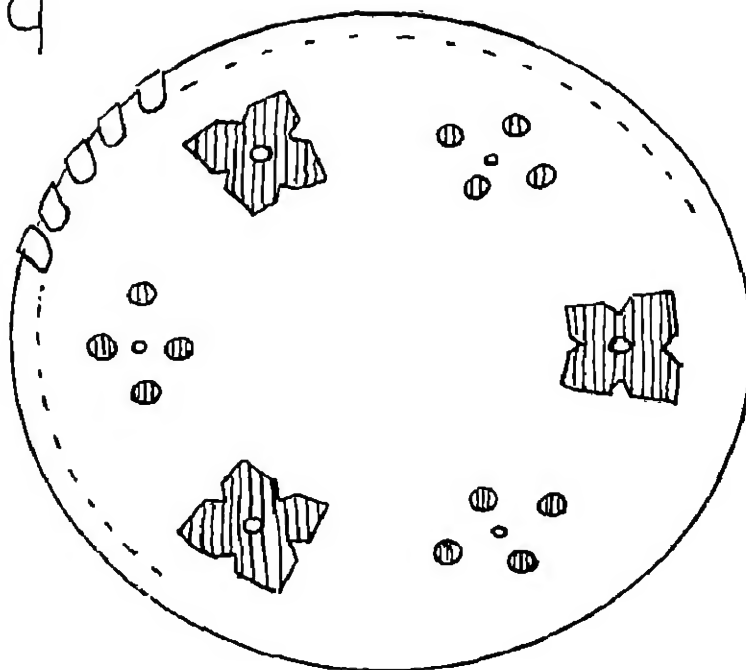


FIG. 41

Mirror Back in Applique Leather

SIMPLE LOOM WEAVING

THE principles regarding the selection of a suitable craft for use in the Junior School have been discussed in the General Introduction to this section (page 970). This leaves us with a number of crafts from which a final choice has to be made. A brief statement of the claims of weaving may, perhaps, be of help to those who are considering the possibilities of this craft in relation to school requirements. All genuine crafts have certain values in common. The special values of weaving may be conveniently stated under the following headings—

1. Its Practicability as a Classroom Craft.
2. Its Importance to the Community.
3. Its Historic Background.

1. *Practicability as a Classroom Craft*

Weaving is a basic craft which can be carried on in the classroom without elaborate or costly apparatus. The processes are readily understood by young children, and may be introduced in such a way as to suit individual ability. The materials are cheap, pleasant to use, and readily obtainable. The things made are useful, interesting to the children, and may be graded to form a progressive course throughout the school. This course, complete in itself, may form the basis for further study of the craft in the Senior School. With the growth of knowledge of processes and of materials, it is possible to foster creative design in a natural way through the needs and desires of the individual.

2. *Importance to the Community*

Children need to make real things and to gain first-hand experience with life and culture. The craft selected should, therefore, be one which is followed in actual life, and should be simple enough to be understood by children in the Junior School. Weaving is particularly appropriate in this respect; the underlying principles are easy to understand, while the number of

people engaged in the industry and the world-wide use of the product is such that there can be no doubt as to the genuineness of the craft.

3. *Historic Background*

Weaving has been practised by nearly every race from the earliest times, and is sometimes called the Mother of Pottery. Primitive man found in it a solution to many problems in his contest with his environment. He used it in his quest for food, for the provision of shelter, protection, and transport. The first weaving was probably a form of basketry, but, with the discovery of spinning, cloth-making became general. There is ample evidence that both spinning and weaving were known to primitive man.

There are many references to weaving in ancient history and folklore, and there is no doubt that the early civilizations attained a very high standard of craftsmanship. It is interesting to note that one of the early forms of decoration introduced by the Egyptians was made by leaving out some of the weft threads in order that the needle workers might introduce coloured threads and form patterns as in modern needle weaving and drawn-thread work. The fine tapestry weaving of the Middle Ages also indicates the closest co-operation of weavers and needle workers. The craft has continued to be of increasing importance throughout the ages, and until the Industrial Revolution was a domestic handicraft. Hand weaving is still of considerable importance, and many of the finest fabrics are produced by this means.

Simple Elements of the Craft

The simplest woven fabric consists of two sets of threads interlaced at right-angles to one another. To facilitate the work it is necessary to stretch one set of threads and to hold them in a convenient position. The apparatus on which this is effected is called the loom. The threads which are stretched, or warped, on the

loom are called the *warp*; the threads interlacing the warp are known as the *weft*. The type of fabric produced depends mainly on the spacing of the warp threads. This has an important bearing on the work, and should be thoroughly grasped if craft knowledge is to be developed. An examination of a piece of plain weaving will reveal that the warp and the weft show in about equal quantities on the surface of the cloth. This is known as *tabby weaving*. Had the warp threads been placed at a greater distance apart, it will be clear that the weft could have been pressed more closely together, and less warp would appear on the surface of the cloth. When the warp threads are sufficiently wide apart, the weft completely covers the warp, and we obtain a fabric known as *tapestry*. Conversely, it is possible to place the warp threads so closely together that the weft is entirely hidden. The correct warp spacing for each type of weaving must be found by experiment, as it depends on the size of the threads in use.

Possible Scope of Weaving in the Junior School

When considering the type of work possible in the Junior School it is necessary to bear the following points in mind—

1. The work should be within the capacity of the child. The idea that the teacher should prepare the loom and do any finishing necessary is not in line with modern practice
2. The things made should be such as the children would wish to possess.
3. It should be possible to finish the work in a reasonable time. This ensures a sustained interest and permits of the widest possible range of experience.
4. The processes should be in keeping with traditional craftsmanship

A survey of the functions of the loom may help to solve the question of what may reasonably be expected, but the determining factor will be the individual ability of the children.

The Loom

The primary duty of the loom is to stretch the warp and to hold it in a convenient position for

working. This is a comparatively simple proposition when the length of warp required is short. It can be wound directly on to the loom without further trouble

When a warp of greater length is required, it is necessary to make additions to the loom to accommodate the extra length, and to learn the necessary technique for making and handling such a warp. This is a difficult and somewhat lengthy process

The second function of the loom is to permit of the raising of groups of threads in order that the weft may be passed through on a shuttle, instead of darning it in with a needle. The simplest form of this requires one heddle, through which half the warp threads have been passed. The patterns possible with this are very limited, and the use of four heddles is necessary if the range is to be increased to any extent. When any considerable number of threads have to be dealt with, the process is long, and young children find it tedious.

It is clear that, as the loom is developed to permit of the use of a longer warp and of four heddles for pattern weaving, it becomes more difficult to handle. The preparation of the warp and the entering of the heddles, necessary before weaving can commence, take a considerable time, and it is doubtful if children in the Junior School are likely to understand the loom sufficiently to have control over the patterns obtainable. The question of weaving apparatus is one of considerable importance. Such looms must be made of wood and be of considerable strength; it is not likely that children of the age in question will be able to make the necessary construction.

The foregoing considerations led to the making of a series of experiments with the simple cardboard loom that is used in Infants' Schools. It has been found that any type of weaving can be done on a cardboard loom, as it is possible to handle warp spacing of from four threads to an inch to sixteen threads to an inch. Such work is necessarily small, and can be finished in a reasonable time. Children can construct the looms and exercise their inventive faculties in devising looms of special shapes to meet their requirements. A progressive course can be followed, and, on its completion, the children will be ready

LOOMS *with* SERRATED EDGES

Warp on one side of Loom.

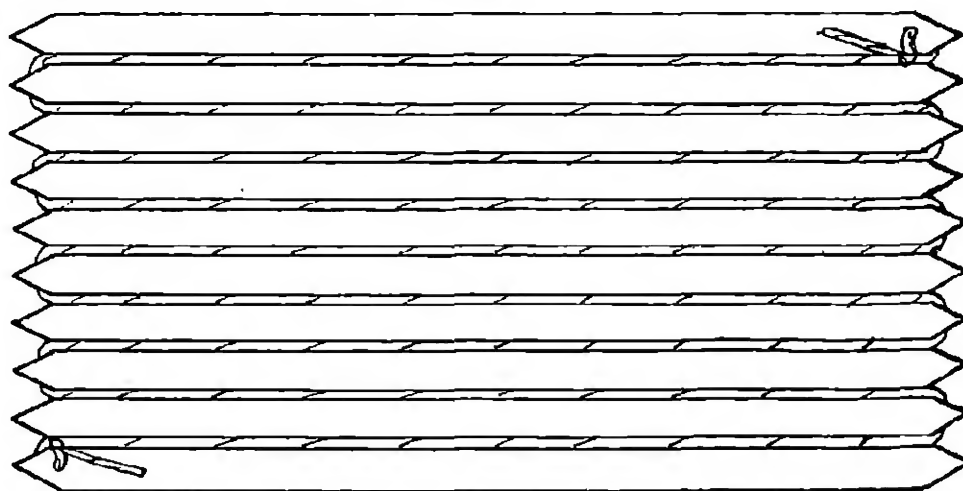
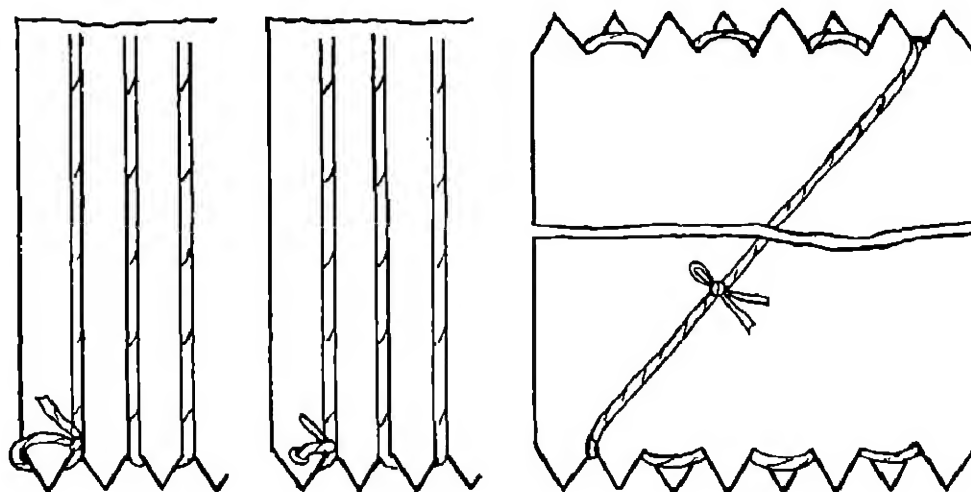


FIG. 1



Methods of fixing the Warp to the Loom.

FIG. 2

to proceed to the larger constructions with a sound understanding of the loom, its functions, and its possibilities. They are at an age, too, when the work of handling the greater number of threads is done more speedily, and have gained that confidence in themselves so necessary if successful craft work is to be accomplished.

A syllabus on these lines is given below, and each section is dealt with in turn.

Suggested Syllabus

Section I. The Rectangular Cardboard Loom with Serrated Edges. The arrangement of the warp will permit of—

1. Weaving on one side of the loom.
2. Weaving on both sides of the loom.
3. Weaving with one edge formed by turning the weft.

Weaving at this stage will consist of simple tapestry work used in the construction of woven articles which are complete on removal from the loom.

Decoration will consist of—

1. Colour in stripes across the loom.
2. Colour in stripes along the loom.
3. Colour in rectangular blocks.

Section II. Circular and Shaped Cardboard Looms. Here we come to the design and con-

struction of looms for the weaving of one-piece articles such as bags, tea cosies, slippers. Consideration is given to the special problems connected with the necessary variation in warp spacing in this type of construction, and to the manner in which this may be turned to advantage in the building up of craft experience.

Weaving at this stage will consist of simple tapestry and tabby weaving. Pattern will be obtained mainly from the variation of the colours used in the weft, and of the number of warp threads used as a group.

Section III. Rectangular Cardboard Looms developed to give closer Warp Spacing. Tabby weaving. Variation of warp spacing and its effect on the fabric produced. Various plaid weaves.

Pattern from—

1. Changing the colour of the warp.
2. Changing the colour of the weft.
3. Changing the colour of both warp and weft

Experiments in various textures.

Demonstration of the need for selvedge.

Simple twill weaves. Simple standard pattern.

Fabrics woven to be afterwards made up into the articles required.

Section IV. Experiments in Loom Construction, to permit of the lifting of various groups of warp threads

The use of simple heddles.

THE RECTANGULAR CARDBOARD LOOM WITH SERRATED EDGES

The special problems in connection with the teaching of weaving to young children have led to the introduction of cardboard looms. Such looms are definitely a school product, and have no counterpart in the weaving industry. If work on them is to lead to an understanding of the craft it is necessary that the true principles of weaving should be inculcated from the beginning. A carefully graded course on such looms is of great value, and often is as much as can be attempted in the Junior School.

The first loom to be used is the rectangular cardboard loom with serrated edges. This is often used in the Infants' School, and will not

be entirely new to the children. It consists of a rectangular piece of cardboard, along two opposite edges of which serrations have been made, the teeth being about $\frac{1}{4}$ in. apart. Though such looms may be made by the children it is considered better to purchase them in order that weaving may commence without undue preparation. They are quite cheap, and may be obtained in various sizes. Care should be taken that they are cut from good quality strawboard 16 oz. in weight; the larger looms may be made from slightly heavier boards. The teeth should be carefully spaced to give four warp threads to an inch. A type known as "The Studiette

Loom" has recently been placed on the market in answer to a demand for improvement in the shape and efficiency of the teeth.

Preparing the Warp

The warp is wound on the loom at an even tension, care being taken that each thread sinks into the bottom of the notch provided for the purpose. The ends may be fastened in any way

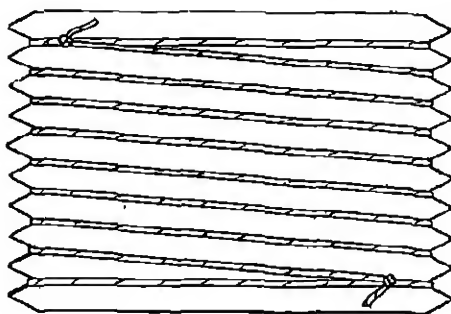


FIG. 3

Attaching Warp to Loom: Method 1

convenient, but sufficient thread must be left to enable the worker to secure them to an adjacent warp thread when the work is removed from the loom.

When it is required to weave on one side of the loom the warp is put on as follows.

Place the free end of the thread in the first notch at one end of the loom. Pass the thread across the loom and into the first notch at the other end. Pass round the tooth and out to the front of the loom. Carry the thread across the loom, into the second notch on the other side, round the tooth, and out to the front of the loom in the third notch. Continue this process until sufficient warp has been put on (Fig. 1).

If it is required to weave on both sides of the loom one of the following methods may be used—

Method 1. Fasten the free end of the warp to the loom through a hole pierced near the first tooth at one end or with a loop passing round the loom. Wind the thread round and round the loom, causing it to sink into each notch, and fasten the other end in the same way as was used at the beginning (Fig. 3).

Method 2. Fasten the free end of the warp by

passing a loop over the first tooth or as described in Method 1. Place the thread in the first notch at one end, carry it across the loom and into the first notch at the other end. Continue across the loom and into the notch from which the start was made. Take the thread round the tooth into the second notch, make a complete circuit of the loom, and place the thread into the same notch from the other side. Pass round the next tooth and continue until sufficient warp has

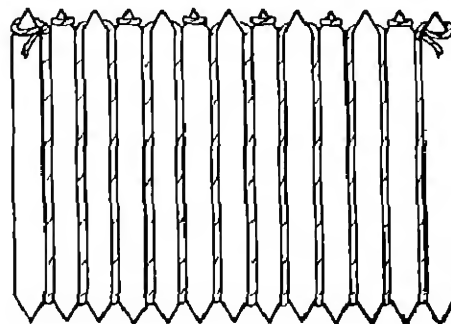


FIG. 4

Attaching Warp: Method 2

been put on. Secure the end in the same way as at the beginning (Fig. 4).

When the weaving is completed the loom is torn away. It is not advisable to attempt to weave a second piece on the same loom.

The Weft

The introduction of the weft is a process which requires considerable attention. The warp spacing of the loom under review will give tapestry weaving unless the thread used is nearly $\frac{1}{4}$ in. in diameter. Raffia will give this width, but difficulties are caused by the need for constant joinings. The fact that the technique of tapestry weaving forms a sound basis for further work makes it desirable to start with this form of weaving. The weft is inserted with a weaving needle, and is passed from right to left and back again from left to right, over and under alternate warp threads. The first and all odd-numbered lines of weft cover the odd-numbered warp threads, while the second and all even-numbered weft threads cover the even-numbered warp threads. The weft is left rather

loose and well pressed together so that one line in *each direction* forms one complete line of weaving, completely covering the warp.

This process sounds simple, but experience shows that it is almost impossible for the beginner, of whatever age, to keep the edges straight. Attempts to devise apparatus with this in view meet with varying success. A common method is to secure a knitting needle along the loom in line with the first and last warp threads. This certainly keeps the edges straight, but does not prevent the other warp threads from working towards the centre of the weaving. It seems better to design and weave only such things in which the problem does not occur, until the

Colour in Stripes Across the Loom

It will be remembered that the whole of the warp is covered by the weft in this type of weaving. Stripes of colour may be obtained by the simple expedient of changing the colour of the weft at intervals. The ends are cut off and woven in unless they are to be left out to form a fringe.

Colour in Stripes Along the Loom

It will be necessary to work with two colours of weft alternately. It has been pointed out that all odd-numbered weft threads cover the

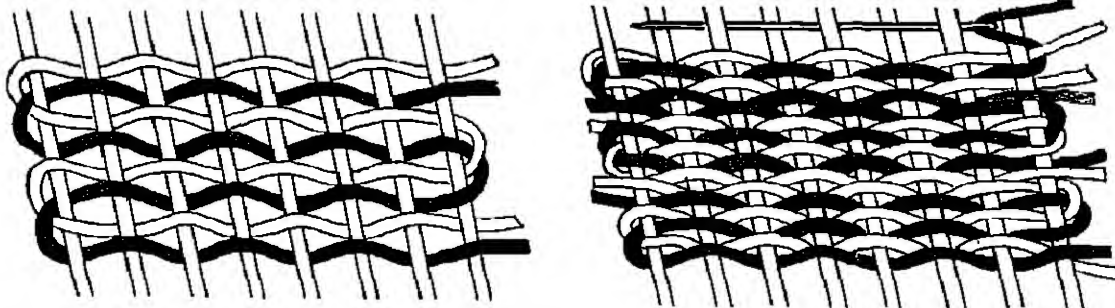


FIG. 5

Colour in Stripes Along the Loom

children are ready to give the whole of their attention to its solution. This matter will have to be dealt with later, and further discussion may be left till then.

Weaving on One Side of the Loom

The method of putting the warp on the loom is given on page 1073. The type of work with this method of putting on the warp consists of simple mats. Each weft thread is put into place and cut off an inch or so from the outside warp threads, the loose ends forming a fringe. To form the basis of later work the most elementary forms of pattern making may be introduced. At first pattern making will consist of—

1. Colour in stripes across the loom.
2. Colour in stripes along the loom.
3. Colour in rectangular blocks.

odd-numbered warp threads. If the weft threads from right to left are of white thread, and those from left to right are blue, then white and blue stripes will appear along the length of the loom. When continuous weft threads are used the technique is slightly different. Assume that there are six warp threads. Start from the *right* with a white weft and pass over the first, under the second, and so on until the line is finished. Leave that needle and start a second line from the *right*, but pass under the first, over the second, and so on. When the edge is reached the first weft thread will be under the last warp thread, and the second weft thread over it. Take up the first needle used and pass *over* the second *weft* thread, under the sixth warp thread, and back to the right side of the work. The second weft thread will be tied down by the first, and may now be passed over the sixth warp

thread and across to the other side. This process is repeated at each edge, working the colours alternately. Should there be an odd number of warp threads the first weft thread is taken under the second *weft* thread before returning over and under its correct warp threads (Fig. 5).

Colour in Rectangular Blocks

Blocks of colour may be obtained by breaking a line of colour along the loom. Assume that $\frac{1}{2}$ in. of weaving has been done in blue and white as described in the last paragraph. It is necessary to cover the warp threads with blue, where previously they were covered with white, and *vice versa*. This is arranged by passing one over or under another as required, in the same way as described for colour in stripes along the loom.

Weaving on Both Sides of the Loom

Two methods for putting the warp on the loom are given on page 1075. With Method 2 the weft may be taken round and round the loom; thus it is impossible to decrease the width of the fabric. This limits the loom to the making of bags of various sizes. This method may also be used when it is required to weave a piece of material of twice the length of the loom. This entails the turning of the weft at both edges. Before this is attempted it may be considered desirable to weave a bag by putting on the warp as in Method 1. This makes it possible to weave a bag in one piece, and for the teacher to introduce the problem of keeping one edge straight. The straight edges of the loom form the top and bottom of the bag. Start at the edge which is to form the top and insert the weft across that side, turn the loom over and weave across that side. On reaching the top the weft is returned on the same side, and attention may be devoted to the edge forming the top. This is the selvedge and great care must be taken if it is to be kept

straight. In order to do so it is necessary to examine the warp spacing after the insertion of each line of weft, and to correct, with the point of the weaving needle, such warp threads as have become displaced. This problem is discussed in the next paragraph and on page 1088.

Selvedge on Two Edges

When material with one selvedge has been mastered a piece of cloth with two selvedges may be attempted. This may be woven on one or on both sides of the loom: the method of warping is determined by the size of the cloth to be made. Experience shows that, at this stage, some form of mechanical aid to assist in keeping the correct warp spacing is desirable if satisfactory work is to be achieved, and that, where the children have been required to devise something for themselves, considerable ingenuity has been shown. The problem will be better understood if a piece of weaving is attempted. It will be found that, as the work proceeds, the fabric will gradually become narrower. If the warp threads are examined it will be found that they tend to bunch together toward the middle of the cloth and are wide apart at the two edges. Attempts to fix the two outside warp threads in such a way that they cannot be drawn in does not prevent other threads near the edge from moving in. Should this method be adopted the cloth will be of the correct width, but where the warp threads are too wide apart it will be found that the finger can be pushed through the fabric. The best method for regulating the warp spacing is the cardboard reed. This consists of a strip of cardboard about 1 in. wide along one edge of which serrations have been made to accommodate each warp thread. The reed is placed between the warp and the loom and is turned so that it rests on its straight edge, and each warp thread is placed into one of the serrations. When in use the reed should be kept as near the weft as is convenient.

CIRCULAR AND SHAPED CARDBOARD LOOMS

These looms are made by the children from rectangular pieces of strawboard. Articles made on them usually consist of circular bags, table mats, tea cosies, slippers, and similar articles. The weaving of circular objects depends on the fact that the warp is stretched from the periphery to a ring fixed in the centre of the circle. The distance between any two warp threads is not constant, as they radiate from the ring to the circumference of the circle. It is impossible to work on such looms without gaining valuable experience of the effect of warp spacing on the resultant fabric. The work gives scope for ingenuity in the planning of looms for special shapes, and in the use of knowledge gained in previous work. This further experience of the effect of the limitations on constructive and decorative design caused by the materials is of great value.

Weaving may be done on one or both sides of the loom. It may take the form of a circle or any part of a circle; of shapes consisting of two or more curves; or of irregular shapes consisting of curves and straight lines. It is hoped that a detailed description of the weaving of a shaped bag and notes on the construction and threading of other looms will clear up any technical difficulties likely to be met with in this type of work.

A Shaped Bag

Cut a paper pattern of the shape required and paste it to a piece of strawboard, leaving a margin of 1 in. all round. There is no need to cut a portion of the strawboard away, and the loom is stronger if this is not done. Mark the centre of the top of the bag and fix a $\frac{1}{2}$ in. curtain ring at each side of the loom. These rings are fixed in three places to prevent them from being pulled out of position when the warp is put on. Mark off distances of $\frac{3}{8}$ in. all round the curved sides of the bag, and pierce a hole large enough for the thread to pass through at each mark. The loom is now ready for the warp. In the earlier exercises this should consist of a continuous thread, and fine macramé twine serves very well. Tie one end of the warp to a

ring and pass the other through the first hole to the other side of the loom, pass it through the ring on that side and return through the second hole. Continue from one ring to the other, passing through the loom at each hole, and keep an even tension on each warp thread. The last thread is tied to the ring (Fig 6).

It will be noticed that the warp threads are very close together at the rings, and are $\frac{3}{8}$ in. apart where they pass through the loom. An attempt to introduce the weft over and under alternate warp threads will reveal that it is almost impossible to get it near the ring, and that even then the weft does not show. The possibilities of obtaining pattern by showing the warp only are too difficult to be developed at this stage, but the unsatisfactory appearance indicates a craft problem to be overcome. The best solution is to use tapestry weaving and to group the threads at the ring. Assuming there are fifty threads, then by counting ten threads as one, it will be possible to get the weft up to the ring. If two colours are used it will be possible to make lines of colour radiate from the top of the bag. The technique of this has been dealt with in the first simple loom, and need not be gone into further (page 1076). When the weft thread on the surface of the cloth gets too long it will be necessary to lessen the number of warp threads in each group, and so increase the number of groups. Eventually the weft will pass over and under one warp thread at a time. There is a good deal of scope for individuality in the arrangement of pattern produced by these necessary changes in construction.

All weaving starts near the ring, and it is advisable to work on both sides of the loom rather than to complete one side at a time. Care should be taken at the edge where the warp passes through the loom. Plenty of weft must be put in or holes will appear round the edge of the bag when the loom is removed. If the shape is much longer than a semicircle it is advisable to weave a portion in the middle of each side in the following way.

After weaving about 3 in. of each side mark the three centre warp threads and weave a complete line on them, passing the weft from

right to left *and* from left to right. Continue weaving and increase the number of warp threads by one on each side for each new line. This will form a crescent-shaped piece of mate-

enough, the weaving is continued with the original weft using all the warp threads on each side. The crescent-shaped piece may be woven with material of a different colour or a different

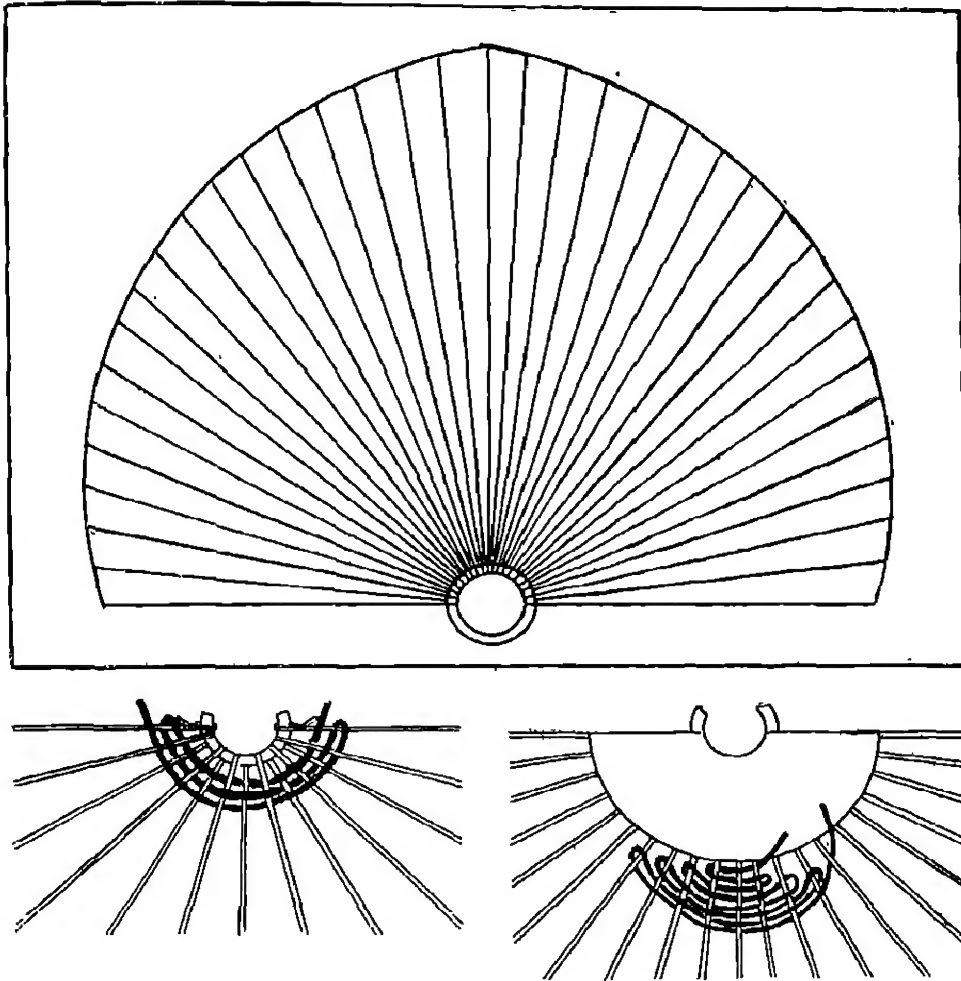


FIG. 6

Shaped Bag woven on Both Sides of Loom

rial, and will increase the length of the middle of the bag at the expense of the two edges. It is better to put two such pieces in each side rather than to attempt to make up too much distance with one piece. When it is considered that the weaving done in this way is large

pattern, and offers an opportunity for obtaining interesting pattern out of construction.

When the weaving is finished the loom is removed, but sufficient weft must be put in to cover the holes formed by the loom. It is usual to attach a plaited or woven handle to the rings,

and to work the button-hole stitch on that portion of the rings not covered by the warp.

A Circular Mat

Mark a circle of the required size on a piece of strawboard. Fix a ring at the centre of each

Continue from one ring to the other until all the holes have a warp thread passing through them. Tie the last thread to a ring. Weave from the centre of the loom on each side, obtaining a decorative effect from variation in colour and pattern from the changing warp spaces. When both sides have been filled the loom outside

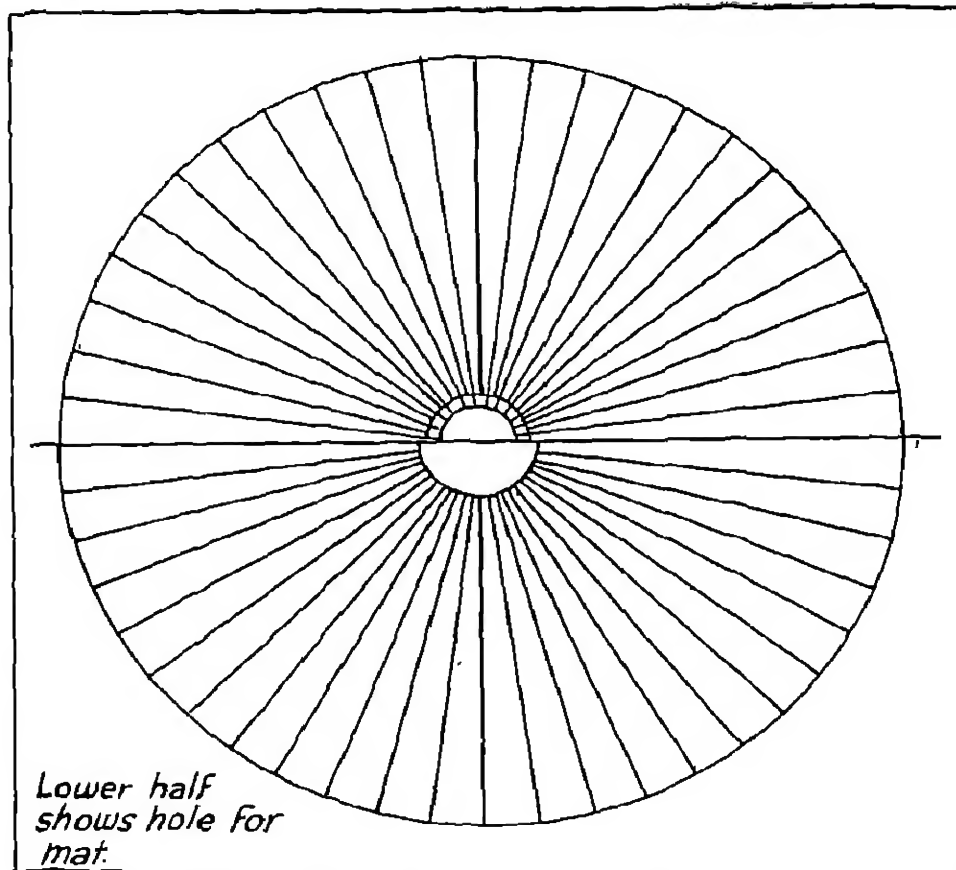


FIG. 7

Loom Prepared for Circular Mat or Bag, with Ring and with Hole at Centre

side, and pierce holes $\frac{3}{8}$ in. apart round the circumference of the circle. Tie the warp thread to one of the rings, pass the free end through one of the holes at the circumference of the circle, and through the ring at that side of the loom. Return the warp through the next hole and through the ring to which the end was tied.

the circle is cut away leaving a circle of strawboard inside the mat. The edge is sometimes bound with a strip of plaited material or it may be oversewn to cover the cardboard. (Note. If desired a small circle may be cut in the middle of the loom and the ring omitted. This lessens the thickness of the mat.)

A Circular Bag

The loom is marked out and pierced as for the circular mat. A portion of the circumference must be made to form the opening for the bag, and this is arranged when threading the loom with warp. Mark the section required for the opening and thread the remainder of the loom as was done when weaving the mat. When this is done thread the remaining portion by passing from the ring on one side through the next hole to the other side of the loom. Instead of passing through the ring on that side return the thread through the next hole and through the same ring. Continue this until the segment on one side is filled, and proceed in a like manner on the other side. When the edge of the loom is broken away an opening will be formed at this point. This method should be noted as it is adopted when it is required to weave on one side of the loom. If two circular discs are required of the same size they may be made on one loom by completing the warp on one side in this way, and then threading the other side in the same way. This method is used earlier in the course with the serrated loom where the warp thread is passed round each tooth (page 1075, Fig. 4).

Weave from the centre of each side as before, and when both sides are finished break the loom away and remove the circular disc from the bag. It is usual to add a plaited or woven handle, and to weave over the holes formed by the rings. An interesting bag of this type may be made by weaving two circular discs and joining them by a strip of woven material used as a gusset. This may also form the handle.

Slippers

The making of a pair of slippers is very popular, and calls for considerable ingenuity. The first thing to do is to make a pattern which will fit the person who is to use the finished product. The children are shown the approximate shape (Fig. 19), and then cut a pattern and fit it to the upper of a shoe already in use. Several attempts may be required for this, care

must be taken that the edge of the pattern fits nicely round the welt of the shoe, and that the sides are long enough to join at the back of the shoe. The finished pattern is pasted to a piece of strawboard and a ring fixed at the instep. Both shoes may be woven on the same loom if required; if this is to be done a ring must be fixed on both sides of the loom. Holes are pierced $\frac{3}{8}$ in. apart round the outer edge of the pattern and along the straight inner edges (Fig. 19). Thread the warp from the back of one of the straight pieces from hole *A* to *B*, through the loom and out at *C*, across to *D*, through the

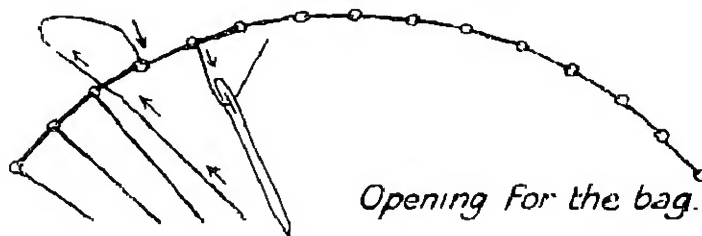


FIG. 8

loom, and out again at *E*. Continue until one side is finished. When the instep is reached the warp passes through the ring instead of passing through the loom. When the front portion is completed continue the other straight piece as at the beginning. A second loom may be made for the other shoe or the under side of the same loom may be used. The weft is inserted from the back of one of the straight strips round the ring and along to the other strip. Care must be taken that the ends are not pulled out of shape or the shoe may be too small. When finished the work is removed from the loom and the two short sides at the back are sewn together. The soles may be made from a piece of felt, or they may be bought for the purpose. Very successful soles have been made from an old felt hat. Children often bring shoes from home in order that Christmas or birthday gifts may be made to that size.

A Tea Cosy

This is another very popular construction. The making of it is very like the making of the shaped bag described on page 1081. It may be made in one piece, or two pieces may be woven

and joined by a straight strip of woven or plaited material. When planning the size, it is necessary to remember the lining and padding. This makes a considerable difference to the size of loom required.

In all these constructions it is desirable to stress the uses to which they are to be put. This is a fundamental part of design, and the children should take an increasing part in making the necessary decisions.

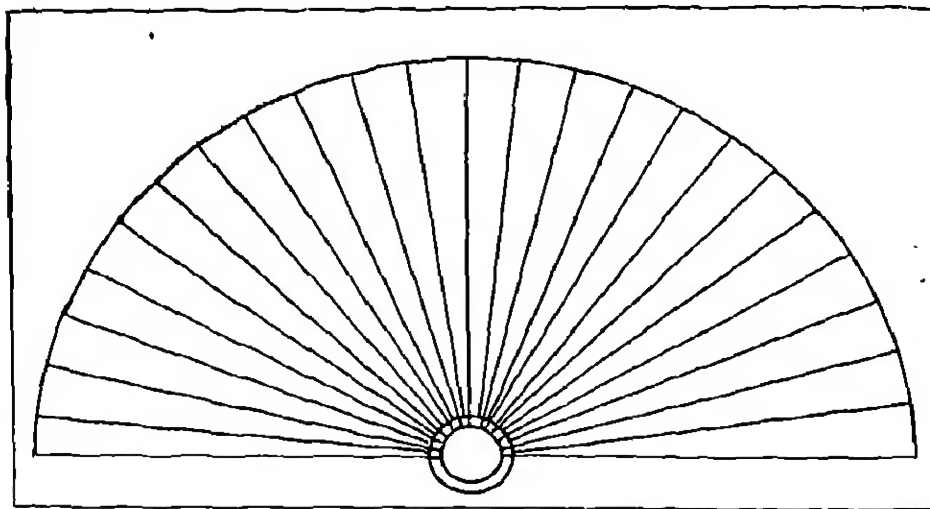


FIG. 9
Tea Cosy

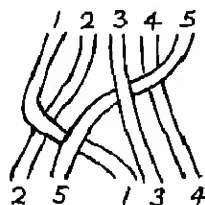
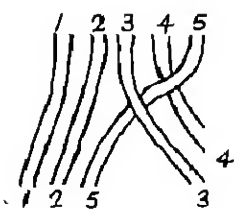


FIG. 10
A Plait of Five Strands

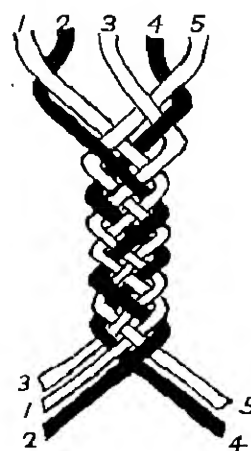
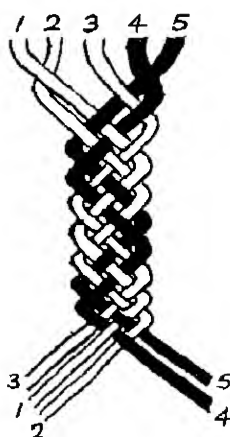


FIG. 11
Colour Patterns in Five-strand Plait

Plaiting

Though not weaving in its true sense, plaiting is often used at this stage of development, and thus it would seem advisable to describe a simple form of this work. Most people are able to plait with three strands, but are in difficulties when a wider piece of material is required. It is proposed to keep to the plaiting of odd numbers of strands in order to lessen the number of technical processes dealt with.

It will be remembered that when three strands are being plaited the process is as follows,

Two of the strands are held in one hand, and the single strand held in the other hand. Starting from the right the outside strand is brought over the second strand and put into the other hand. Now the left-hand strand is taken over the second and then into the right hand. Any odd number of strands may be dealt with in this way. Assume that it is required to make a plait of seven strands. Take three of the strands in the left hand and four in the right. Work with

the right hand and pass the outside strand over the first, under the second, over the third, and place it in the other hand. Now work with the left hand. Take the outside strand and pass it over the first, under the second, over the third, and take it into the other hand. When tightening the plait push the hands outward; do not pull towards you. Patterns may be varied by arranging the colours differently. For instance, if three blue strands are to be worked with four white strands, they may be arranged with all the white ones together, and all the blue ones together. This will form a definite pattern. Should they be arranged alternately white, blue, white, blue, and so on, an entirely different pattern will be made. The number of strands to be plaited together may be determined for any width by placing them together longitudinally. If the distance across eight threads measures 1 in., then you will require the same number to make a plait 1 in. wide. It is quicker to plait a narrow strip of material than to set up a loom and weave it. For diagram see Fig. 11.

LOOMS DEVELOPED TO GIVE CLOSER WARP SPACING

In order to have control over the type of fabric produced it is necessary to have a loom on which the warp spacing may be varied. For

warp. It is not advisable to have more than four holes to an inch on one line, so that they may be arranged on two or more lines as required (Fig.

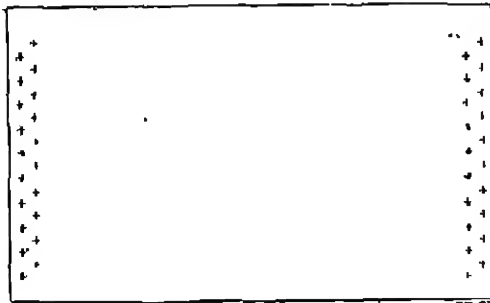


FIG. 12

Loom with 2 Lines of Holes

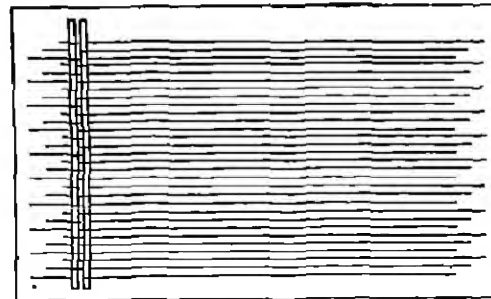


FIG. 13

Prepared Loom with Pulp Cane Inserted

general purposes we should be able to use from eight to sixteen warp threads to an inch. The simplest loom for our purpose consists of a piece of strawboard having holes at each end for the

12). Construction of the loom is as follows—Assume that a piece of material is required to be made 6 in. long, 3 in. wide, with twelve warp threads to an inch.

A piece of strawboard $9\frac{1}{2}$ in. long and 4 in. wide will be required. It will be convenient to arrange the holes in three lines at each end of the loom. These lines are drawn at intervals of $\frac{1}{2}$ in., leaving $6\frac{1}{2}$ in. for weaving. A margin of $\frac{1}{2}$ in. at each edge will allow of 3 in. in width. The area for weaving is now divided into inch spaces, and four holes are pierced on each line. The holes are to be $\frac{1}{2}$ in. apart. Those on the second and third lines at each end must start $\frac{1}{4}$ in. and $\frac{3}{4}$ in. in from the edge, respectively, in order that the threads may be evenly spaced (page 1083).

The warp is put on the loom in the following way. Fasten the warp at the first hole, carry it across the loom, and pass it through the corresponding hole at the other end. Bring it through the first hole on the second line and across the loom to the second hole at the other end. Continue this till the threads run across the loom with the required number to an inch (Fig. 13). It is possible to arrange any warp spacing up to sixteen threads to an inch. It is advisable to insert two pieces of pulp cane or similar material instead of the first two lines of weft in order to give a firm line to weave against.

Tabby Weaving

In plain or tabby weaving the warp and the weft show equally on the surface of the cloth. If a very open fabric is required, it is necessary to select threads of appropriate thickness. This can only be done when experience of the sizes of threads and of the correct warp spacing for each size has been gained. There is no fixed rule on the matter, but the following may be taken as a guide. Stout knitting cotton requires about eight warp threads to an inch. Average three-ply knitting wool requires from twelve to sixteen threads to an inch.

The weft is inserted with a weaving needle. It should be passed through the threads from right to left, and returned from left to right. Unlike tapestry weaving, each time the weft is taken across it counts as one *pass*. The weft is pressed down with the needle or a comb, but the warp must be allowed to show. This effect will be simple to obtain if the warp spacing is correct. Great care must be taken to see that

the correct width is kept as the weaving proceeds. The children have already had some experience of the difficulty of doing this. Mechanical aids are not recommended at this stage. It is necessary to develop judgment in setting the length of each weft thread. It will be found that the length of each thread across the work is rather longer than the width of the material being woven. It is a good plan to put in the weft slightly curved, so that it touches the last weft thread at each side, but is a little away from it in the middle. When this is pressed down, the work will be of the correct width. The first inch must have special care given to it. There is a tendency to work the warp threads towards the centre so that they have to be corrected with the point of the weaving needle. This fault will be very obvious when pattern is to be obtained from stripes of coloured warp.

Simple Pattern Weaving

Since both the warp and the weft appear on the surface of the fabric it will be necessary to take them both into consideration in pattern weaving. With tabby weaving it is possible to obtain patterns from—

1. Changing the colour of the warp.
2. Changing the colour of the weft
3. Changing the colour of both the warp and the weft.

Interesting effects may be obtained by changing the colour of parts of the warp. Most of the historic patterns of this description were obtained by using a weft thread rather smaller than that used for the warp. The work was pressed together so that the weft did not show on the surface of the fabric. Quite good work is obtained by this method even if the true tabby weaving is adhered to. The warp must be kept in order or the lines of colour will not run straight.

Further patterns are possible if a change is made in the colour of the weft. It is a severe test to require weaving with the warp of one colour and the weft of another. Unless the work is kept perfectly even the colour will be patchy. Where the warp bunches together, usually in the middle of the fabric, the warp colour will be prominent, and at the edges, where the weft

shows most, the warp will have been allowed to become open

When the colours of both the warp and the weft are changed, many patterns can be obtained. The plaid patterns are made in this way. Experience is required to gauge the effect that

Weave an inch or so of tabby weaving, using thirty-six threads in a width of 3 in. Divide the warp into nine groups of four threads, and thread a second needle with a weft of a different colour. The two wefts are to be used alternately; the first must continue with tabby

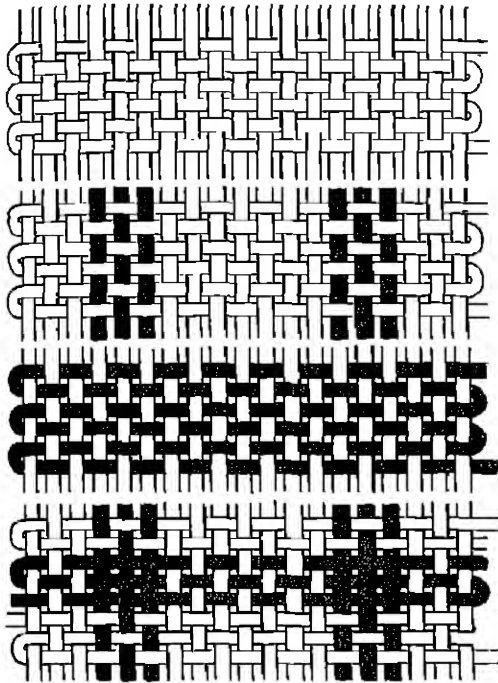


FIG. 14
Simple Pattern Weaving

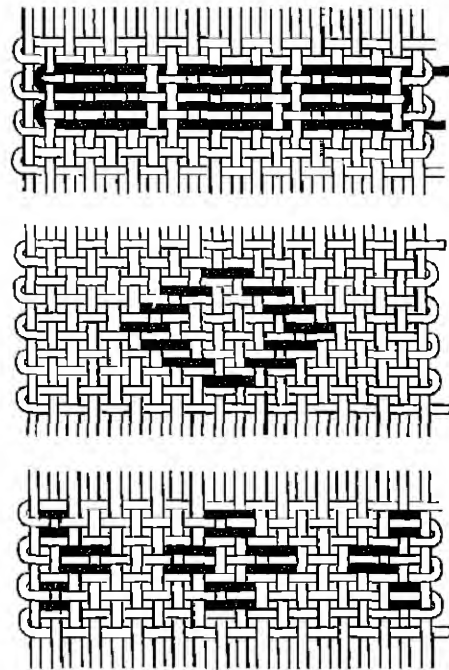


FIG. 15
Brocade Weaving

one colour has on another. Personal experience in this matter is invaluable.

Other variations in texture and pattern may be obtained from changing the size and kind of materials used. Two or more threads may be taken as one in both the warp and the weft

Brocade Weaving

This is an interesting form of decoration for tabby weaving. The following experiment will serve as an illustration, and also make a good exercise in this form of decoration.

weaving, and the additional one passes under and over groups of four threads

First pass a line of brocade weft and follow this with a line of tabby. Return the brocade weft over and under the *same* groups as before. Now weave a line of tabby but be careful that it does not go between the same threads as the last line of the same weft. When a line of coloured squares stands out from the fabric, drop the brocade weft and continue tabby weaving. The brocade weft need not be taken right across the fabric as it is held in place by the tabby weft. Any number of warp threads

may be taken as a group, and they may be changed at any time. Suggestions for this type of pattern weaving are given in diagrammatic form (Fig. 15).

Tapestry Weaving

Tapestry is an interesting form of pattern weaving which may be used by itself or as a means of decorating plain weaving. Some elementary facts regarding the work have been given earlier (page 1075). The following additional information may be of help to those who wish to continue the work suggested there.

It will be remembered that the warp is entirely covered by the weft, so that pattern must be obtained by changing the colour of these latter threads. It is also necessary to remember that one pass or line of weft consists of one thread from right to left and one from left to right. In the exercises mentioned above, each weft thread is taken right across the warp. This is not essential, and more elaborate patterns are built up by changing the colour of the weft in each line as required. The best plan is to work out a pattern on squared paper, counting the space between any two vertical lines as a warp thread, and that between any two horizontal lines as a weft thread. A separate weft thread will be required for each piece of colour on the first line. When one colour has been taken as far across the web as the pattern demands, it is brought out on top of the fabric and the next colour is used. The weft threads may be changed as often as required; there is no need to join the ends of the new weft in any way; they are left on the surface and cut close to the fabric when the weaving is finished.

The technique necessary for weaving lines of colour across the warp and for weaving a series of lines along the warp has been explained (page 1076). Single lines of colour along the warp should be avoided at this stage as they form long slits in the work, and the technique necessary to overcome this is slow and difficult for young children. Examination of traditional designs will show that lines slanting at about 45 degrees are used considerably. They lend themselves admirably to this form of weaving, and are simple to execute. The following ex-

ample will make this clear. Assume that there are twenty-four warp threads on the loom. Insert white and blue weft as follows.

First line. Cover eleven warp threads with white, two with blue, and eleven with white.

Second line. Cover ten with white, four with blue, and ten with white.

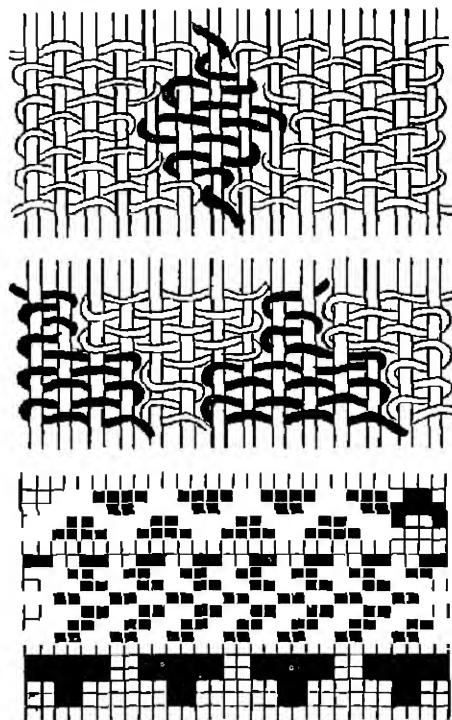


FIG. 16

Tapestry Weaving

Third line. Cover nine with white, six with blue, and nine with white.

Continue increasing the blue at the expense of the white until six lines have been woven. Weave the seventh line as line five, the eighth line as line four, and so on until at the eleventh line the first line will be repeated. It will be seen that a blue diamond on a white ground will be the result. Fig. 16 shows other simple patterns.

It is advisable to keep to simple patterns, and to exclude such as require fine detail. When working from a drawing care must be taken to

select the weft of the right thickness to complete one line of the design. To do this it is often necessary to use two or more threads together.

Simple Twill Weaving

These looms may be used to introduce simple twill weaving. A large number of patterns are possible, and this form gives ample opportunities for individual experiment. Some of the patterns possible are given in Fig. 17, and many more may be devised by the scholars. The first few lines of weft may be substituted by knitting needles in order to see the pattern and to make sure which threads are to be raised. The warp is divided into groups of four threads and one or more of each group must be used when passing a line of weft. As in tabby weaving a pass of weft consists of a line from right to left or from left to right. As in most weaving the face of the cloth is underneath, and it is the pattern which appears there which must be considered. The following is an example.

Thread a loom with thirty-six warp threads to a width of 3 in. Divide these into groups of four threads and insert the weft, passing under the first thread of each group. Make the second pass under the second thread of each group, the third weft line under the third warp thread, and the fourth weft line under the fourth warp thread of each group. Continue with the fifth line under the first warp thread, and so on. This pattern will be recognized as one commonly used in cloth weaving. Other patterns may be made by changing the order in which the threads in each group of warp are used, or the weft may pass under more than one thread of each group.

When the first four weft threads have been inserted it will be noticed that the edges of the fabric are weak and irregular. Before we can proceed it will be necessary to arrange for a selvedge at each edge. In all pattern weaving of this type it is necessary to reserve a few threads on each edge for this purpose. The selvedge consists of tabby weaving on two or more warp threads. Two would have been enough for our purpose, but to avoid recounting the groups we might use one group from each side. Pass the first weft thread over the first warp thread, under the second over the third,

and under the fourth. Now continue with the pattern, using seven groups of warp threads. When the outside group is reached treat that in the same way as was done with the right-hand group. Continue using the two outside groups

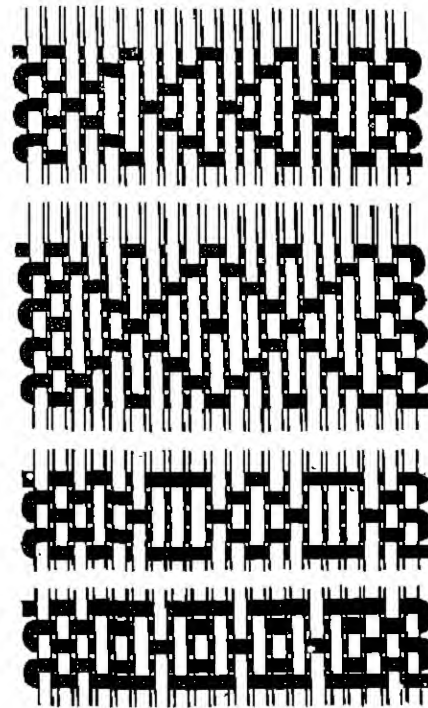


FIG. 17

Simple Twill Weaving

for tabby weaving and form the pattern on the remaining warp threads.

When weaving this type of fabric care must be taken that the weft is pressed well down. It is just as important to work to a given number of weft threads to an inch as it is with the warp. This is the only way in which sound cloth can be made, and the only way in which the worker has control over the design. The size and spacing of both the warp and the weft must be such as to ensure a sound fabric being woven. When making the cloth into the article for which it was designed it is advisable to sew with a machine round any part which has to be cut, as it adds considerably to the strength of the fabric.

EXPERIMENTS IN LOOM CONSTRUCTION

The functions of the loom have been discussed earlier (page 1072). It will be seen that improvements in loom construction must be concerned with the provision of—

1. An arrangement by which any part of the warp may be raised in order that the weft may be passed through.

2. An arrangement to permit any reasonable length of warp to be used without lengthening the loom.

The need for the former will be felt when fabrics requiring a comparatively close warp spacing are made.

The traditional method is to make loops round the warp threads and attach them to rods in such a way that, when a rod is raised, all the warp threads necessary for one line of weaving are raised with it. This demands a loom of stronger material than strawboard, and a piece of wood, a box, or similar object must be substituted. Whatever is used must be made as smooth as possible in order to prevent damage to the threads. If a flat piece of wood is used it is an advantage to fix pieces at the end in order to raise the warp off the board. The procedure is as follows.

Fasten the end of the warp at one end of the loom. This may be done with a drawing pin. Wind on the required number of threads and secure the other end of the warp in the same manner as at the beginning. The two fastenings and any knots should be arranged at one end of the loom. The colour may be changed as required, the new colour is fastened to the old with a knot. The warp threads should be at an even tension and not very tight.

The Cross

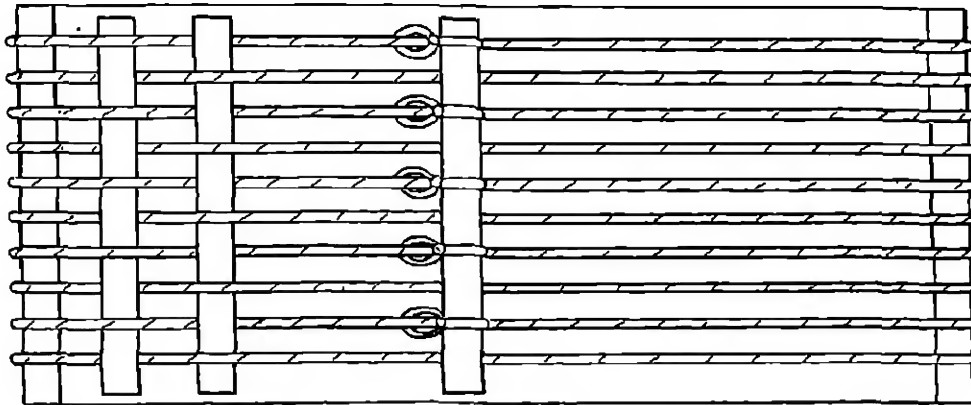
The duty of the cross is to keep the warp threads in order. There is little fear of their becoming entangled when the warp is on the loom, but use of the cross is advised here as it may raise half the warp threads and so lessen the number of loops to be tied. An additional advantage is that the children will be conversant with it when the handling of a long warp makes its use essential. It is inserted as follows.

Raise all the odd-numbered warp threads with a weaving needle as if a line of weft were being inserted. In the opening thus made insert a short stick; a piece of curtain rod $\frac{3}{8}$ in. in diameter will do admirably. Now raise the even-numbered threads in the same way and insert a second rod. The cross rods should be tied so that they cannot fall out but can be moved along the warp readily. When weaving is taking place the cross should be at the end of the loom farthest from the beginning and the end of the warp. If the cross has been put in correctly, the warp will be in an upper and lower layer with the even numbered threads at the top. If a wide ruler or similar object is inserted between the warp layers and turned on its edge, the warp will be open enough to pass one line of weft across instead of raising alternate threads with a needle.

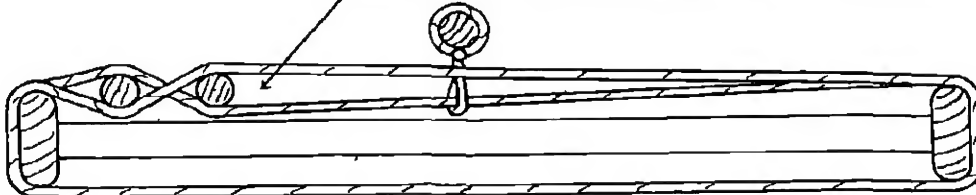
We must now arrange loops on each of the odd-numbered threads in order that they may be pulled up through the even-numbered threads for the second line of weft. It is necessary that the loops should be of an equal length in order that the warp threads may be raised to the same height. To ensure this they should be tied round a ruler or similar piece of wood. The loops should be about $1\frac{1}{2}$ in. long, and enough thread must be left at each end to allow them to be secured to a rod. The method of fixing these loops is shown in diagrammatic form (Fig. 18)

When the loops are tied it will be necessary to attend to the warp spacing. Weaving will begin at that end of the loom to which the warp is fastened, and the threads at that end must be put into place with the aid of a weaving needle. If they are out of order move the cross up and down along the warp. The threads at the other end of the loom may be rather wider than the width required to be woven, as this will allow for the slight drawing in of the warp usual when the weft is inserted. When all is ready, weaving may commence. Each loom will require two rulers, or similar pieces of wood, and a shuttle or piece of wood on which the weft is wound. Put one ruler in the opening formed by the cross, this is left there and when the even-numbered threads are to be raised it is turned on its edge.

SIMPLE BOARD LOOM



First Shed. This is enlarged with a sword.



Second Shed.

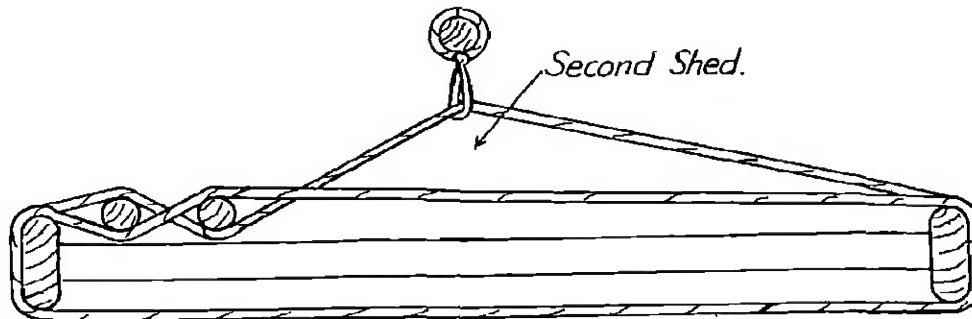


FIG. 18

The second ruler is held in the hand and used to increase the size of the opening when necessary, and to be inserted when the odd-numbered warp threads are pulled up through the even-numbered warp threads. The weaving may be moved around the loom and a piece of cloth nearly twice the length of the loom may thus be made.

When some tabby weaving has been done and the children are accustomed to the use of the loom, other rods may be put on in order to raise any combination of warp threads. Rods may be arranged for tapestry, brocade, or twill weaving. In order to be sure which threads should be raised by each rod it is a good plan to permit the children to pick the threads up with a weaving needle and insert a ruler while they are being tied. The loops should be tied with a fine glossy twine of the macramé twine type in order that they may pass through the warp easily. When wool is used for the warp it is a good plan to brush it over with ordinary starch and to let this dry before the loops are put on. This will make the loose fibres adhere to the strands of wool. Unless this is done these fibres have a tendency to mat together near the loops and

thus prevent the threads from rising. The opening through which the shuttle is passed is called *the shed*. The weft is pressed together with a ruler or comb. Should it be desirable to weave a longer fabric a picture frame or similar article may be converted into a loom instead of a piece of wood.

It is not considered advisable to begin this form of weaving too early. Love of craft is not likely to be inculcated if the children are kept at long and tedious tasks before they are ready for them. Many adults have had the love of craft killed in this way while they were children. The aim should be to develop the craft through small constructions which interest the children, and which they wish to possess. It is difficult to estimate what a child may do when the urge is sufficiently strong, but it should be spontaneous, any pressure is likely to defeat the end in view.

The construction of a loom to accommodate any reasonable length of warp is a more difficult task. The loom must have a roller at each end on which the warp and the finished cloth is rolled. Its construction and use are beyond what may reasonably be expected of Juniors.

MATERIALS

Strawboard

Most of the looms used in the Junior School are made from strawboard. This is sold in standard size sheets 30 in. \times 25 in. Its thickness is determined by the weight per standard size board. The smaller looms should be made from 16 oz. and the larger from 20 oz. boards. It is economical to have the boards cut to the sizes required. Stock as few sizes as possible and order them in such sizes as may be cut from standard boards. The looms with serrated edges should be bought ready for use; they are quite cheap and may be obtained in various sizes

Materials for Threads

The construction of a spun thread should be considered in order that the strength of various threads may be judged. These threads are made from vegetable and animal fibres which have

been twisted together. As a general rule the longer fibres make stronger threads than the shorter fibres of the same material. The more twist that is given to a thread the stronger it will be. The softer the thread the less twist there is in it. It is a good plan to let the children spin some thread on home-made apparatus.

Wool. When wool is used it is best to select a stout, well twisted thread so that it will stand the wear put upon it in construction. Experience has indicated that sixteen threads to an inch is the limit possible in the Junior School, and that weaving with this should not be attempted until the children are ready for it.

Cotton. A stout cotton yarn similar to a material often used in the Junior School and known as knitting cotton is recommended. It may be obtained in at least three sizes and in a good range of colours. The finer cottons should not be used.

Raffia Raffia is convenient to use in some constructions. Most of the circular work may be carried out in this material. If the threading of the loom is made too difficult owing to the number of knots required, fine macramé twine may be used for the warp.

Hemp. There is a stout hemp on the market which weaves very well.

Silko and Stranded Cotton. These are useful for tapestry and brocade weaving. It is often desirable to put two or more threads together to make the necessary thickness.

Straw Plait This is a cheap material and is useful for the making of large shopping baskets.

Tools

The usual tools for cutting strawboard are often available in the Junior School. For cutting

strawboard the knife should be used fairly upright so that pressure is concentrated on the point.

A useful tool for piercing holes in the looms may be had for a few pence. It is a stiletto-like tool with a short blade, and is called a piercer. When not in use, the point of it might be thrust into a cork.

Dowel Rod This is a circular rod, and may be obtained in various thicknesses. The standard length is 3 ft, though longer lengths may be obtained. The most suitable size for this work is $\frac{3}{8}$ in. in diameter. It is used for cross rods, and for the rods which raise the warp threads.

Simple Swords and Shuttles. These are obtainable quite cheaply, and are used for the more advanced looms. The sword is used instead of a ruler. It is also possible to buy the looms described on page 1088.

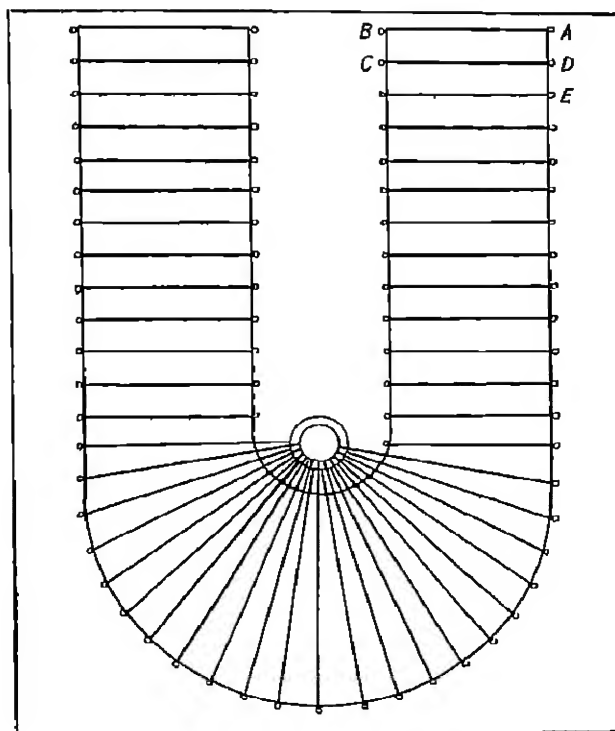


FIG 19

Strawboard Loom for Slippers

RAFFIA WORK

RAFFIA WINDING

RAFFIA winding is one of the simplest and pleasantest occupations for young children. There are, however, one or two simple rules which must be followed if the work is to be a success. To begin with, the raffia must be kept very flat. This can be managed successfully by slightly dampening the raffia. The winding must be done very tightly.

There are many useful articles that the children can make with raffia and cardboard. At this stage the cardboard will have to be prepared by the teacher.

1. *Raffia Mats*

For these each child will want a circle of cardboard about 5 in. in diameter. Then two lines at right angles are drawn through the centre. The diagonals are also drawn so that the circle is divided into eight equal parts. A hole $1\frac{1}{2}$ in. in diameter is cut in the centre. The cardboard is now ready for the winding.

A strand of raffia is flattened out and fixed on one of the lines with gloy, and then wound tightly round the cardboard. The strands should overlap at the edges, so that the cardboard cannot be seen. Care must be taken to keep within the division, and this means that the raffia must be wound into the centre. When one division is finished the next division may be done in a contrasting colour.

To join the raffia the new strand should overlap the last strand, and the raffia should be wound tightly to hold the join.

The third division could be the same colour as the first, and so on. It is a good plan to let the children suggest their own colours.

To finish off the mat the end of the raffia should be tucked neatly underneath the strands.

These mats can be used as teapot or flower pot stands. An attractive string case can be made by joining 6 mats to form a box. The sides should be joined together for about 1 in. by oversewing with raffia. The bottom should be joined to all four in the same way. The top should be joined to one side only to form a lid. On the opposite

side to the join a hole should be made about half an inch from the edge, and a hole in the corresponding side. A plait of raffia made by plaiting 9 strands of raffia 15 in. long should be made. This should be put through the two holes to tie the lid on. The end of the string should project through the hole in the lid.

2. *Table Napkin Rings*

For these, each child will want a piece of tubular cardboard about $1\frac{1}{2}$ in. high, 2 in. in diameter, and $\frac{1}{4}$ th in. thick. The same method of winding is followed as in the mats. Any joins should be done on the outside surface. The raffia must be kept very straight. When the ring has been completely covered twice the end must be fixed with gloy in the centre front. A band of raffia is put round the ring. This should be of a contrasting colour. Fix the end of the strand with gloy and wind round the ring about six times, each wind almost overlapping the previous one. Cut the end crosswise and fix it with gloy.

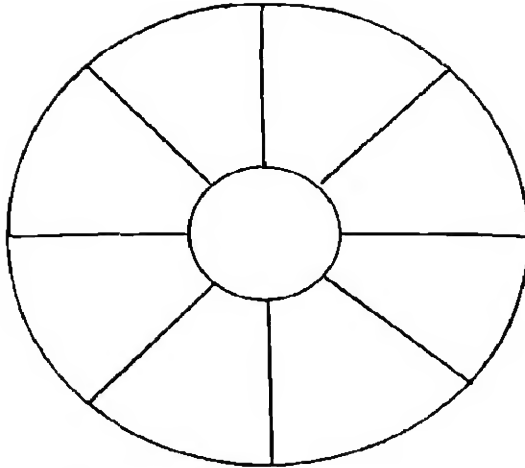
3. *Raffia Door Loop*

A *double-handed door* loop to prevent a door from slamming is of use in both home and school.

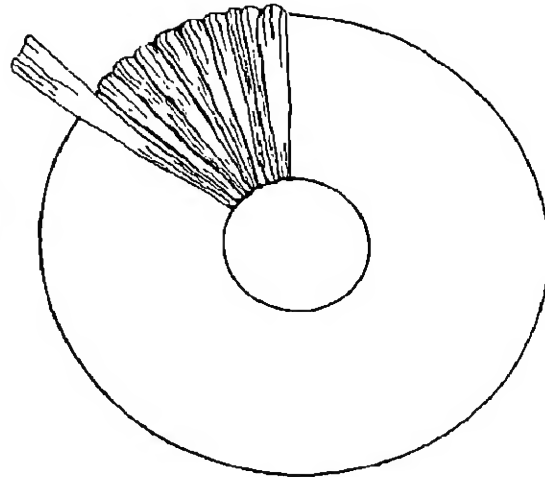
Any thick piece of rope 40 in. long is suitable for this exercise in raffia winding. A rough type of hempen plaited rope can be obtained free from the greengrocer.

The two ends are folded, forming a large loop at each end, so that they meet in the middle without forming a lump. Wide raffia is needed for the decoration. One colour is used to bind the waist or middle, which is about 5 in. long. Each loop is bound with the second colour. This colour is best begun on the last half-inch of the double middle piece, as when the wrapping begins at the loop it must be pulled tightly into the opening to make it close and neat. The new ends of raffia must be bound over with the used ends under the wrapping. To finish off, the raffia is threaded with a raffia needle under the winding for several inches and cut off.

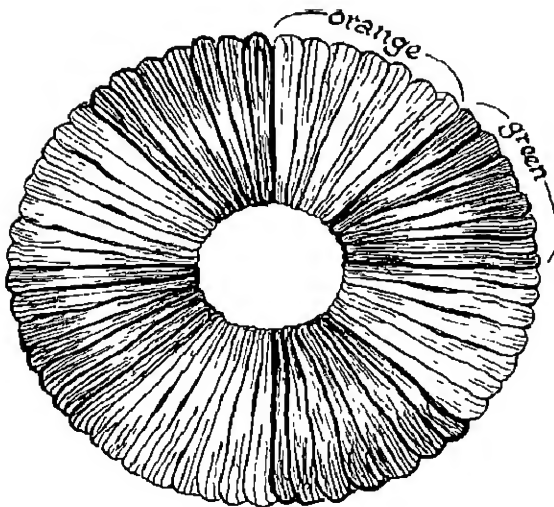
One loop is put on the outside door handle



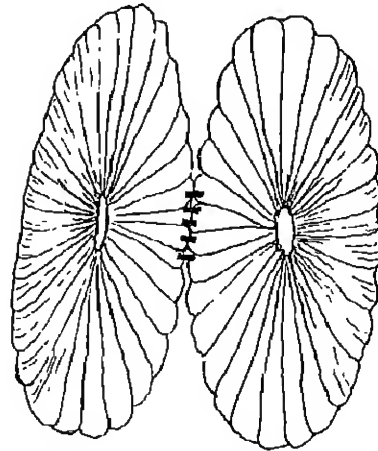
Cardboard shape ready
for winding



Method of winding



Mat finished



Method of joining mats.

FIG. 1
Raffia Mats

and one on the inside one, the "waist" acting as a buffer when the door blows to.

Raffia Balls

The making of raffia balls is an attractive

exercise in raffia winding for children of 7 years of age. It is a good way of using up odds and ends of coloured raffia, and when finished the balls can be used for Christmas decorations. The method is the same as for soft woolly balls.

Cut two circles of cardboard $3\frac{1}{2}$ in. in diameter.

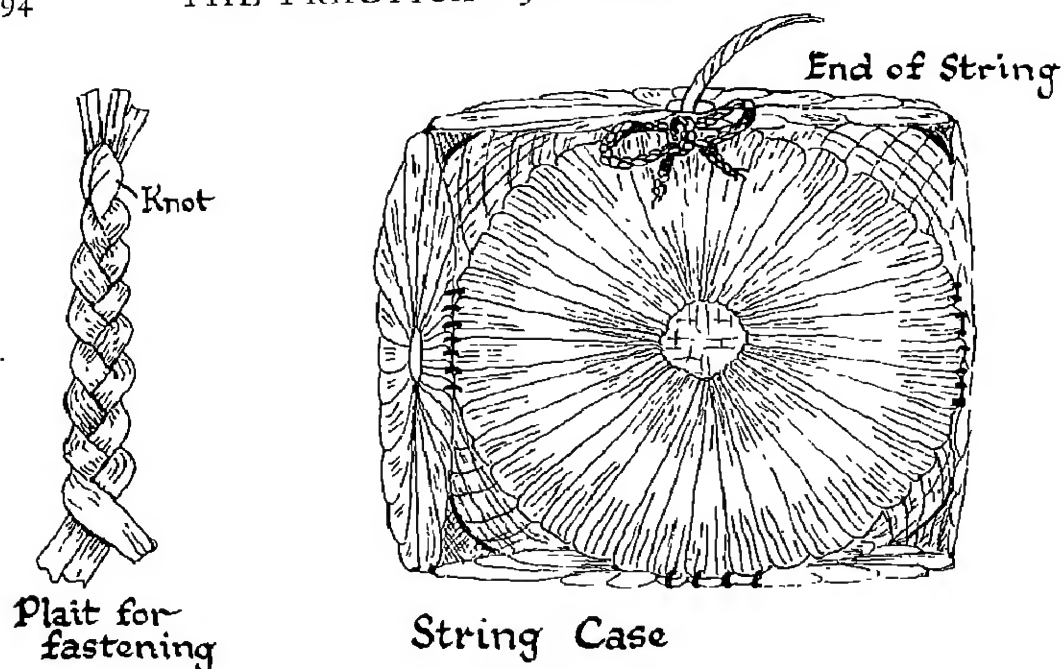
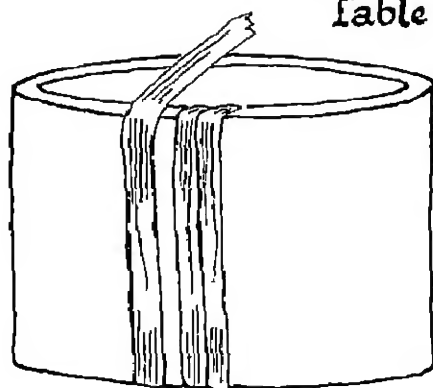
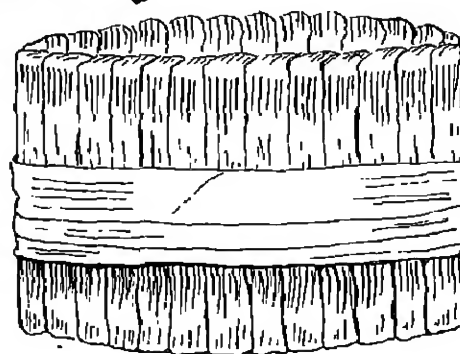


Table Napkin Ring



Method of winding



Finished Article

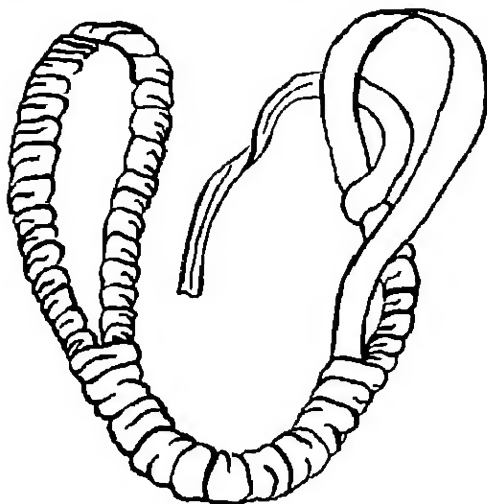
FIG. 2

Then cut out of these circles an inner circle 1 in. in diameter. Tie the two circles together with a thick piece of cotton. The cardboard frame is now ready for working (Fig. 4).

Begin by tying the two halves of the frame together with raffia having a long end. With

this long piece begin winding at an even tension, joining the raffia when necessary with a strong knot, made by placing two ends together and twisting a loop. The last few windings will have to be done with the aid of a raffia needle as the hole gets smaller and disappears altogether.

The ball has now to be cut at the edge. This is best started by the teacher with a sharp



Door loop

FIG. 3.

instrument, and then the child can continue cutting with a pair of scissors down and through the thicknesses of raffia

Now that the discs of cardboard appear in the middle, pull them slightly apart from each other, and tie in the middle with a piece of crochet cotton or equally strong thread, leaving

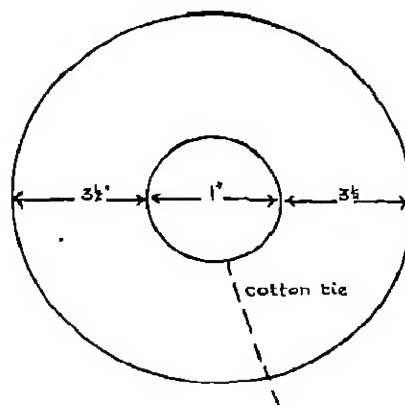


FIG. 4

one end about half a yard long for tying-on purposes. Pull out the cardboard frame. Lastly, the ball now requires to be slightly trimmed into shape with a pair of scissors, and pulled together in the middle to hide the cotton knot.

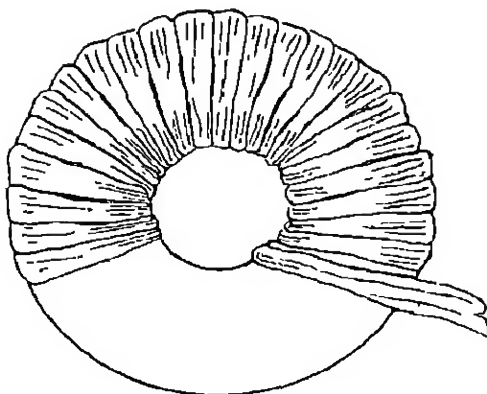


FIG. 5

Front View of Winding

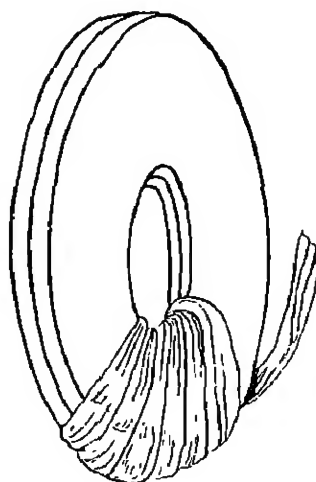


FIG. 6

Side View of Winding

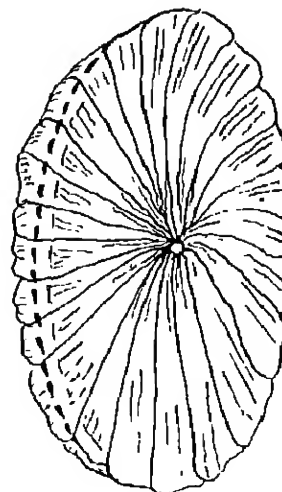


FIG. 7

Cut on Dotted Line

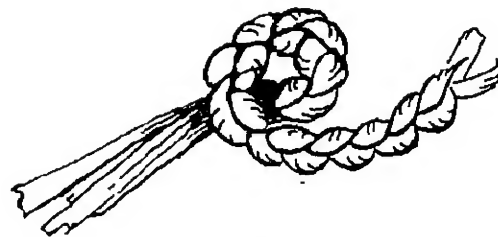
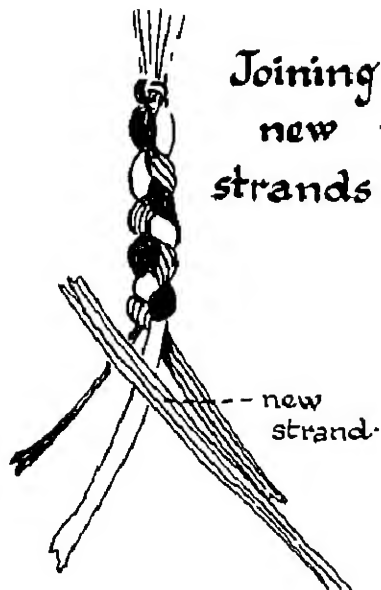
RAFFIA PLAITING

Making the Plaits

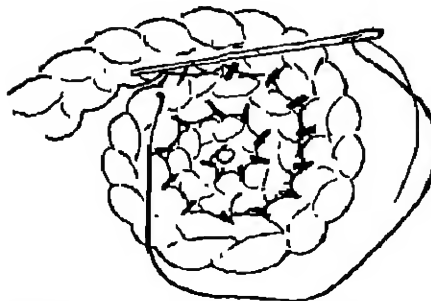
Simple plaits of three strands are suitable at this stage, and can be made in one or three colours. The latter is most convenient at first, as it helps the children to keep their three sets of

strands separate easily. The children might be given a choice of colour, orange, blue, and green work in well together; orange, green, and purple are also attractive.

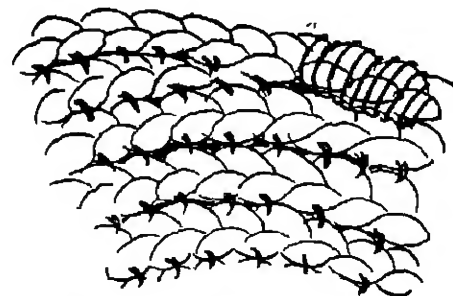
If the raffia is of good quality, three pieces of each colour should be enough. They will make



Method of beginning
mat or hat



Sewing the plait



Finishing off the mat

FIG. 8
Raffia Plaiting

a plait $\frac{1}{4}$ in. wide. Many thin pieces should not be used as the plait will not then look glossy. The pieces should be about the same length, but should not be cut to even lengths, as this makes joining on difficult.

To begin, tie all the ends together in a knot. It is best for the children to plait standing, so the knot should be firmly pinned on the wall or desk. Care must be taken not to twist the plait, which must be tight and firm. This can be ensured by pulling out well to the side, each strand in turn, and by pressing the plait well between thumb and finger each inch or so. It makes up well if it is ironed when finished.

Joining New Strands

It is necessary to have ready the whole length of plait required before making any article; therefore joins must be made. Children find the joining difficult to manipulate at first. Knots must not be made, and ends must not be cut off evenly. As each colour needs renewing place the new strands beside the old ones and work together for a few inches (Fig. 8). Ends can be cut off afterwards.

1. A Set of Dinner Mats

Nine or ten children can be occupied in making one set of round mats, six each making the plate mats, the rest the larger ones. Each child having made her own plait in three colours, the sewing up can be begun.

For a mat 6 in. in diameter $3\frac{1}{2}$ yd. of plait is needed, and for one 8 in. wide about 5 yd.

The Sewing Up

Use thin strands of raffia, in one of the three colours required to predominate, and a straight raffia needle. A wool needle would do as well. To begin undo the knot at the beginning of the plait. Taking the loosened ends in the left hand and the plait in the right, place the plait round in front of the loose ends to make a tight coil (Fig. 8). Secure with needle and raffia thread by sewing over several times, cutting off the loose ends after a round or two. Work from right to left. The stitch used is a kind of flat oversewing from front to back, in which only the edges of the plait are sewn (Fig. 8). The

stitches should be at regular intervals of just under $\frac{1}{2}$ in. They all show and are the same back and front. Each whorl should be well pressed down on the desk. The stitches must not be very tight or the mats will become saucer-like. It is as well to put them under a pile of books to flatten them, now and then. To join

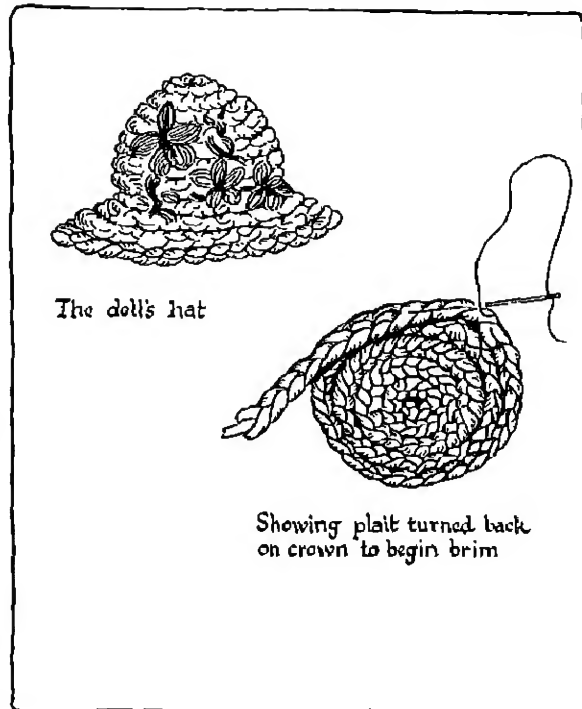


FIG. 9

on a thread, sew the old and new ends in with the plait

The Fastening Off

Cut the plait off evenly at the end. Turn the mat back to front. Now slightly fray out $\frac{1}{4}$ in. of plait and, working from left to right, oversew to beyond the ends of the strands (Fig. 8).

Press the mats with an iron to improve their appearance

2. A Doll's Hat

This is most attractive made in one shade of raffia, and embroidered in colours after it has

been made; for example, natural decorated with red and green. If made of a tri-coloured plait it will have the appearance of a multi-coloured straw.

For a hat $4\frac{1}{2}$ in. from brim to brim, $2\frac{1}{2}$ in. high, 2 yd. of plait is needed.

The Sewing Up

Undo the knot at the end of the plait and make one tight coil, passing long plaited end in front of the loose ends (Fig. 8). Fasten securely with needle and thin thread of raffia and work, stitching from right to left as for the dinner mats. Shape with fingers to form the rounded crown, bearing downward and pulling

the unsewn plait fairly tightly with the left hand. When the crown is about 2 in. deep, the brim can be commenced by turning back the plait toward oneself, on the crown, and by oversewing the two edges from one round (Fig. 9). To make the brim, flatten out this last round on the desk and proceed as before, keeping the brim flat.

Fasten off by putting the last $\frac{1}{2}$ in. of plait just under the brim and oversewing it, as for the dinner mat.

Patterns in colours can now be stitched in raffia on the brim or crown. The brim can be easily turned up or down.

All the work in the hat can be done entirely by the children as there is no lining to cut out or fit in position.

RAFFIA STITCHES FOR COILED BASKETRY

Some Raffia Stitches, on Soft or Hard Coil

Coiled mats, oval and circular, and baskets, can be made on a soft or a hard foundation. For the soft, string, sea-grass, or raffia are used;

should be chosen, the rest may be kept coiled and loosely tied. The pared end can be bent into a very small ring, after being bound over with raffia; as it is sewn over and caught together, a small central button is made. The succeeding coils are fastened or sewn together by raffia stitches which completely cover them. Various stitches are used for this.

Lazy Squaw is sometimes known as the long and short stitch, and it is the simplest of them all. Two methods, both of which are right, provide a choice. In the first, the needle is pushed through from front to back, and the wrapping over the coil is done

from back to front, that is, toward the worker, in the second, the needle is put behind, and comes from back to front, as in the case of ordinary top-sewing, then the wrapping is done from front to back, that is, away from the worker.

Wrapping is done round the last coil which is being added, and stitches are taken through the previous coil. The right side of the work faces the worker.

When the centre button is made, the new coil is laid round quite close from right to left. The

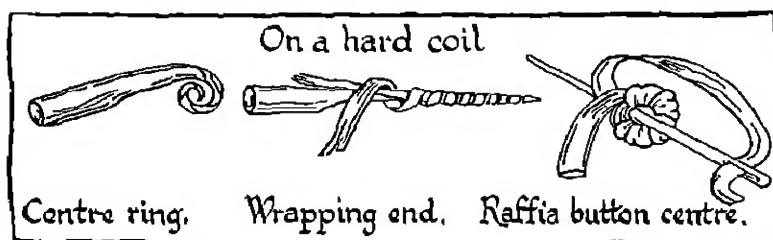


FIG. 10

pulp cane is used for the hard. The coil is made spirally, and is always worked in an anti-clockwise direction after forming the first small ring.

The Hard Coil. A medium size is best, such as No. 6 cane. The end must be sharpened off flat and even for $1\frac{1}{2}$ in. About 12 in. must be soaked in boiling water for ten minutes, as the close circles of the centre curve sharply and will not bend well unless quite pliable. As soon as it is taken out of the water, this piece should be coiled closely round the fingers and tied, to keep the shape in readiness. As a long cane

raffia comes up through the centre hole, and is wrapped once round the top coil, thus pulling the two together; it is brought in between them,

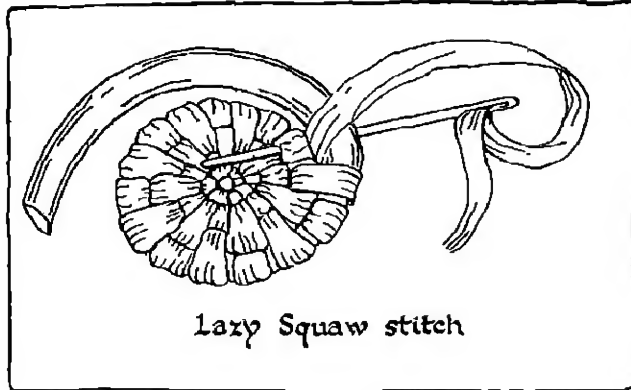


FIG. 11

and once or twice it is wound over the top coil, making the short stitch. The long stitch is done when the raffia is sewn over the two coils. As the coil gets larger, two long stitches with a short one in between them are made to go in between two long stitches of the previous row, and in order to cover the top coil properly two or three wraps must be made as the short stitch. The long stitches must point toward the centre.

The Navajo or Figure-eight Stitch

This stitch binds two coils together by means of interlocking the raffia between the rows, thus lacing them together. There are no spaces left, it is a firm and strong method, as each row is bound over twice.

The centre button is made with Lazy Squaw stitch. The new stitch is started by winding the raffia once over the top coil from front to back and bringing it out between the new coil and the previous one. The needle is then pushed

through under the lower row. This wrapping round the two coils makes the two parts of the figure eight. After each stitch over the top coil, the raffia requires a slight pull to the right. The stitches must be made quite close together. It is easier now, for the top part of the figure eight, to take the raffia in the hand for the twist over the top coil. For the second and lower part of the eight, the loop goes through smoothly if guided by putting the left forefinger in it before pulling it into place.

When a second colour is used, there is always a break; that is, the join will not show in the same row, but in the row above; the ending of the band comes over the place where it began.

Joining Hard or Soft Coil

A new length of cane is added by splicing. The ends to be joined must be sharpened flat for an inch. The two flat ends when placed face to face then make the coil of a uniform thickness. The stitches are continued over the

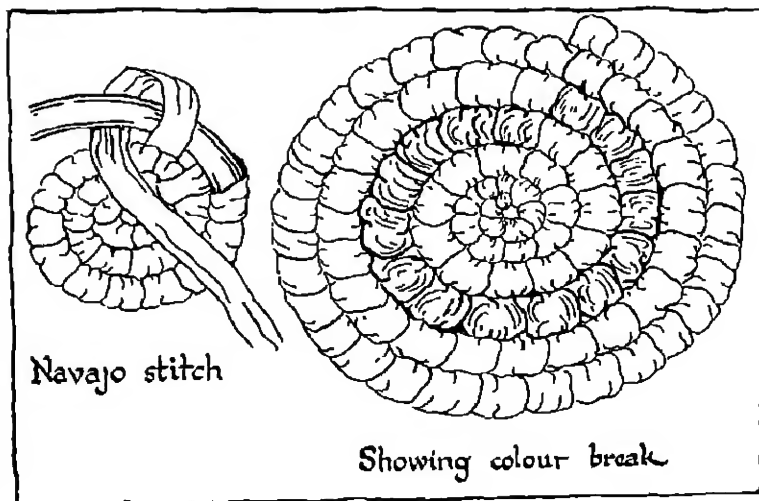


FIG. 12

join, which must be held in position until firmly caught.

When sea-grass is joined, the two ends must be untwisted for an inch, and half the strands

cut off. The two halves left can be tied together with a few twists of cotton, and the working continued.

Finishing Off a Coil

The end of cane or sea-grass must be tapered off, and the stitching for the last 2 in. made to

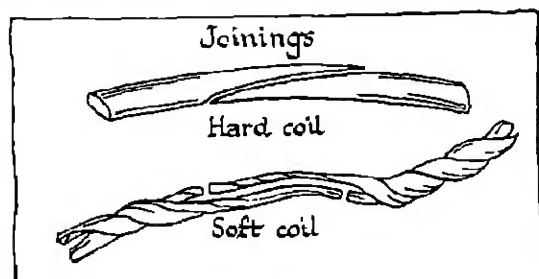


FIG. 13

finish off smoothly with the last coil. The tapering point is bound over with the row below,

and the raffia fastened off by threading up and down two or three rounds and then through two or three stitches

Mariposa Stitch

Mariposa stitch gives an open-work effect, as the rounds are not coiled closely together. The centre of the coil must be made with Lazy Squaw stitch. The new coil is kept a little away from the last row. Two wraps of raffia are made over the top row, working from back to front, then the needle is pushed under the last row, from front to back, making a long stitch over two rows with a slight space or opening. The needle is brought out at the left of the long stitch between the new coil and the last row; it is then pushed through on the right, from front to back. This, when drawn through, makes a tied stitch which forms a knot on the straight stitch. As the circles increase in size it will be necessary to put two long stitches in one hole of the previous row.

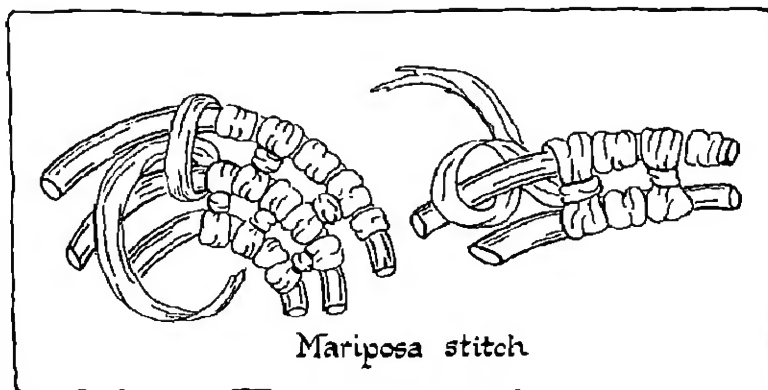


FIG. 14

RAFFIA WEAVING

A Purse

Materials Required. 1. Cardboard loom $9\frac{1}{2}$ in. by $4\frac{1}{2}$ in. with the serrated edge on the short side. This can be obtained already cut. There should be fourteen points on the serrated edges.

2. String or twine, four times as thick as macramé string.

3. Raffia in two or three colours that blend well: e.g. red, black, and white; orange, blue, and black; green, yellow, and mauve.

4. A strong press fastener.

5. A long flat needle, preferably curved up at the end.

first and last strands. This can be slipped down as the work proceeds (Fig. 15).

Stringing the Loom

Begin at the top left-hand corner, knotting the string in the first top groove after passing it round the first bottom notch. Wind the

Weaving with the Raffia

Good glossy raffia should be used, care being taken not to split it. The purse is woven in a striped pattern, the bands of colour being

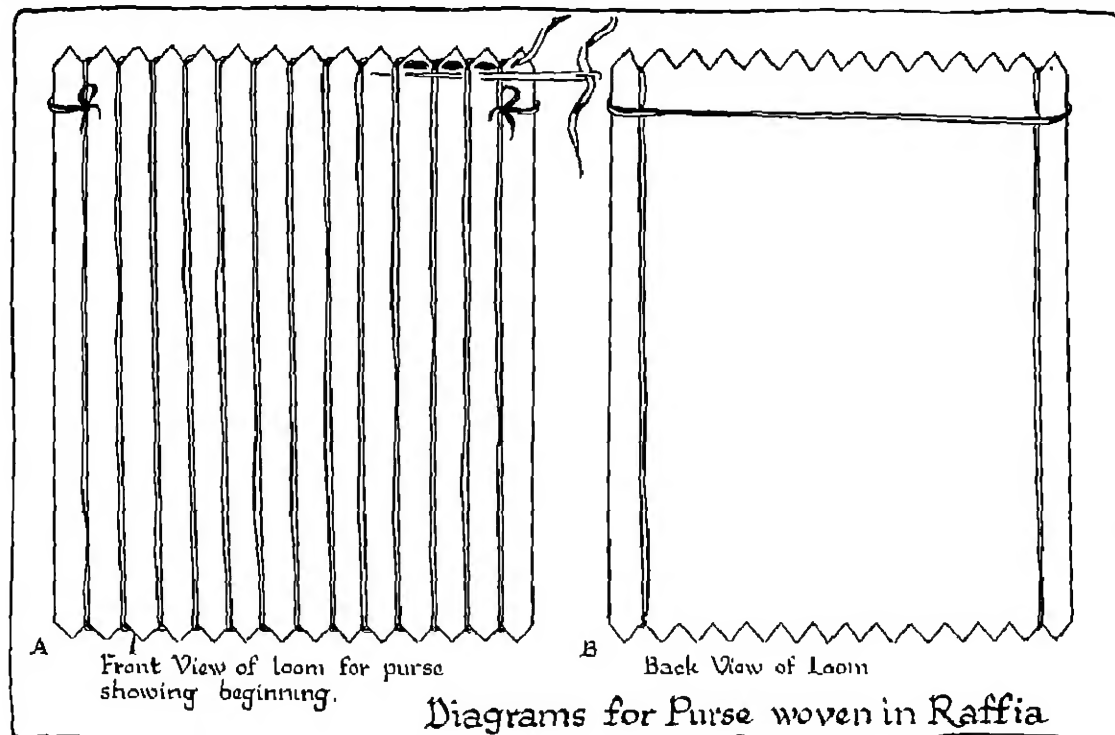


FIG. 15

string behind the second top point and down to the second bottom notch, round the back of the third bottom point and up to the third top notch, and so on. The strands will now be on only one side of the cardboard. The string should be as tight as possible without bending the card. At the end a knot should be tied in the bottom right-hand notch.

While the weaving is in progress the outer strands are liable to stretch, causing the work to sag toward the middle. Avoid this by tying a piece of string tightly across the back, on the

planned beforehand by the child. Divide the loom in thirds, by pencil marks, so that the middle part which forms the back of the purse can be woven in a plain colour and the coloured bands at the top and bottom. Begin at the top right-hand corner, 2 in. from the edge insert the needle under the strands toward the right, and bring it out at the edge (Fig. 15). The end of the raffia will now be out of the way under the strings. Work from right to left, threading the needle over and under the strands. Turn the work upside down on reaching the end and work

back, picking up alternate strings from the row before. As the weaving increases it must be continually pushed up toward the top so that more of the string shows.

How to Join On a New Strand of Raffia

Work the old strand of raffia through to within $\frac{1}{2}$ in. of the end, which is put underneath the string. Begin with the new raffia strand leaving a small end underneath, and taking care to continue the alternate weave. When the work is removed from the loom only very short ends need be seen at the back. Care must be taken to keep the string taut across the back, and it may be necessary to retie it tightly. As the bottom of the loom is approached the work becomes more difficult because the strings tighten, but the raffia must be woven right to the edge of the notches, and the string must not show after the work has been pushed well up. The weaving, however tight, is bound to loosen slightly when removed from the loom.

To remove the loom, bend the cardboard in the middle and then each loop, top and bottom, can be slipped off the pointed edges.

Sewing Up the Purse

Strengthen and neaten each short end by oversewing with raffia in a suitable colour. Sew on the press fastener before sewing up the purse, therefore fold the work in three to get the correct position. Now closely oversew two-thirds of each side in the predominant colour. Use good thick raffia for this.

Similarly, a bag with handles can be made on a loom measuring 6 in. by 5 in., the points being on the short sides. The string is wound on the back and front so that the loom looks the same each side.

The weaving is done all round the loom, so that the tightening string is not needed across the back. The weaving is removed by bending the loom and picking the loops off the points. The edges should be bound with raffia and the bag lined. Handles can be made with a narrow plait.

CIRCULAR WEAVING IN RAFFIA

I. Raffia Table Mats

These are worked on cardboard looms with foundation strands of macramé string. Raffia is not strong enough for foundation strands, as it breaks with the continual pulling necessary to tighten the raffia to ensure a good result. In good weaving the foundation strands are practically covered, and are hardly noticeable when the work is finished. These strands should be the shade of the principal colour used. If looms are not available, draw the shape and the size of the mat required on a piece of stout cardboard. Place dots round the circle or oval shape $\frac{3}{8}$ in. apart, and pierce with a stiletto. If a round mat is being made cut out a circle $\frac{1}{4}$ in. in diameter in the centre. If an oval shape is desired make a slit one-third of the length across the centre of the mat and about $\frac{1}{8}$ in. wide e.g.: a mat 9 in. across would want a 3 in. slit, $1\frac{1}{2}$ in. each side of the centre point.

How to Thread the Loom. Begin by threading the macramé string through the centre slit, then through one of the holes. Carry the string down the back through the slit and join with a flat knot. Pass the needle through the same hole and bring out in the centre; then pass through the next hole on the right and back through the centre. Continue this until all the holes have been used, taking care to keep each strand in its proper place with the aid of the needle. The strands must not overlap or be uneven. It is necessary to pull them fairly tight. Fasten off the string with another flat knot.

Weaving the Mat. The weaving is more effective if done in two or three colours. Thread the needle with the coloured raffia and slip it under ten or twelve string strands from left to right, draw through, taking care that the end is left lying flat under the twelve strands. Begin to weave from right to left, taking up one thread and passing over the next. When one round has

Raffia Table Mats in Circular Weaving

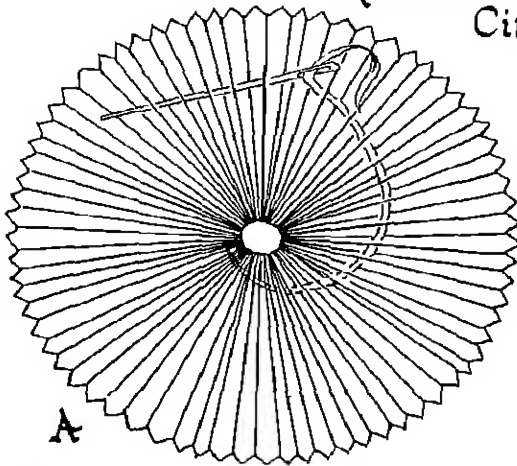


Diagram showing how to begin the weaving

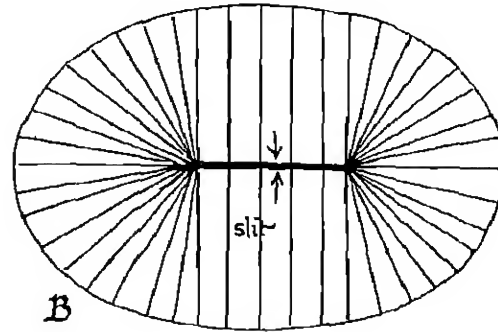


Diagram showing the slit in oval mat

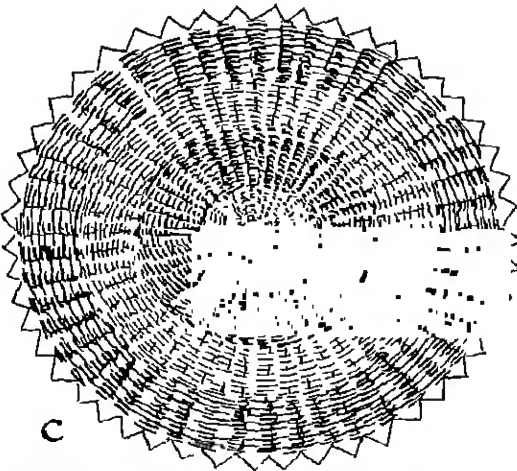
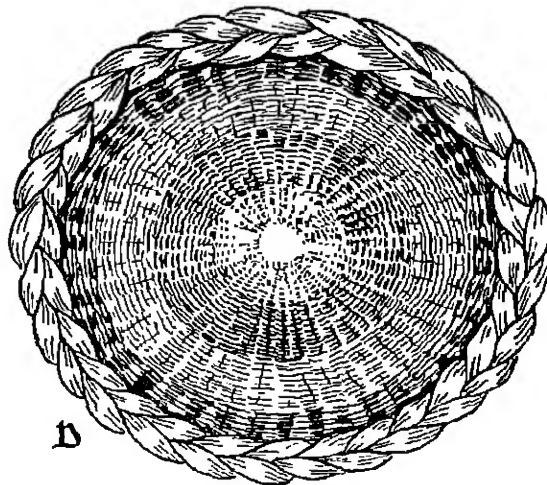


Diagram showing bands of coloured weaving



Finished specimen, showing plaited border.

FIG. 16

been completed place the left-hand fingers on the beginning end and pull gently from the needle end to tighten the raffia, for the tension must be kept the same throughout or uneven weaving will be the result. This gentle pulling should be frequently applied. To fasten off the raffia slip

the needle back under the strands. To commence a fresh piece slip the new piece under the strands, from left to right as at the beginning, taking care to recommence the weaving at the correct stitch. All ends must be kept out of sight underneath the weaving. Change the

colour of the raffia according to the colour scheme chosen. As the weaving of the mats is increasing it must be well pushed down towards the centre, and the tension kept tight. The weaving should continue until it is difficult to get the needle into the string strands, even one at a time. When it is impossible to get another line worked, slip the needle through underneath and fasten off.

How to Finish Off the Edges. To finish the edges make two plaits of the colours used in the weaving. About twenty-four strands of raffia should be sufficient, but the number depends on the quality of the raffia used. The plaits when finished should be wide enough to cover the edges of the looms. Fix one plait round the edge of the right side by stabbing through plait and loom with a slanting raffia stitch to fit into the slanting thread of the plait. Then fix the second plait to the wrong side in a similar manner. When both sides have been fixed, work round the outer edges of the two plaits to join them together. Care should be taken in fixing the plaits not to let the two joins, back and front, come together, as the thickness would be rather clumsy.

2. Raffia Tea Cosy

Preparation of Cardboard Foundation. The size of the cardboard should be 24 in. \times 18 in. From the base measure up 4 in. and draw a line 16 in. long, leaving 4 in. each side. Find the centre of the line and put a dot 10 in. above it. Draw a curve on the left-hand side of this dot to the end of the line, and a similar curve on the right-hand side. From the centre of the curve measure off spaces $\frac{3}{8}$ in. apart along the curve each way, and then pierce the dots with a stiletto. Just above the centre of the base line fix two brass rings about $\frac{1}{2}$ in. in diameter each side of the cardboard. The foundation cardboard is now ready for the foundation strands, which should be worked in macramé string to match the principal colour of the cosy.

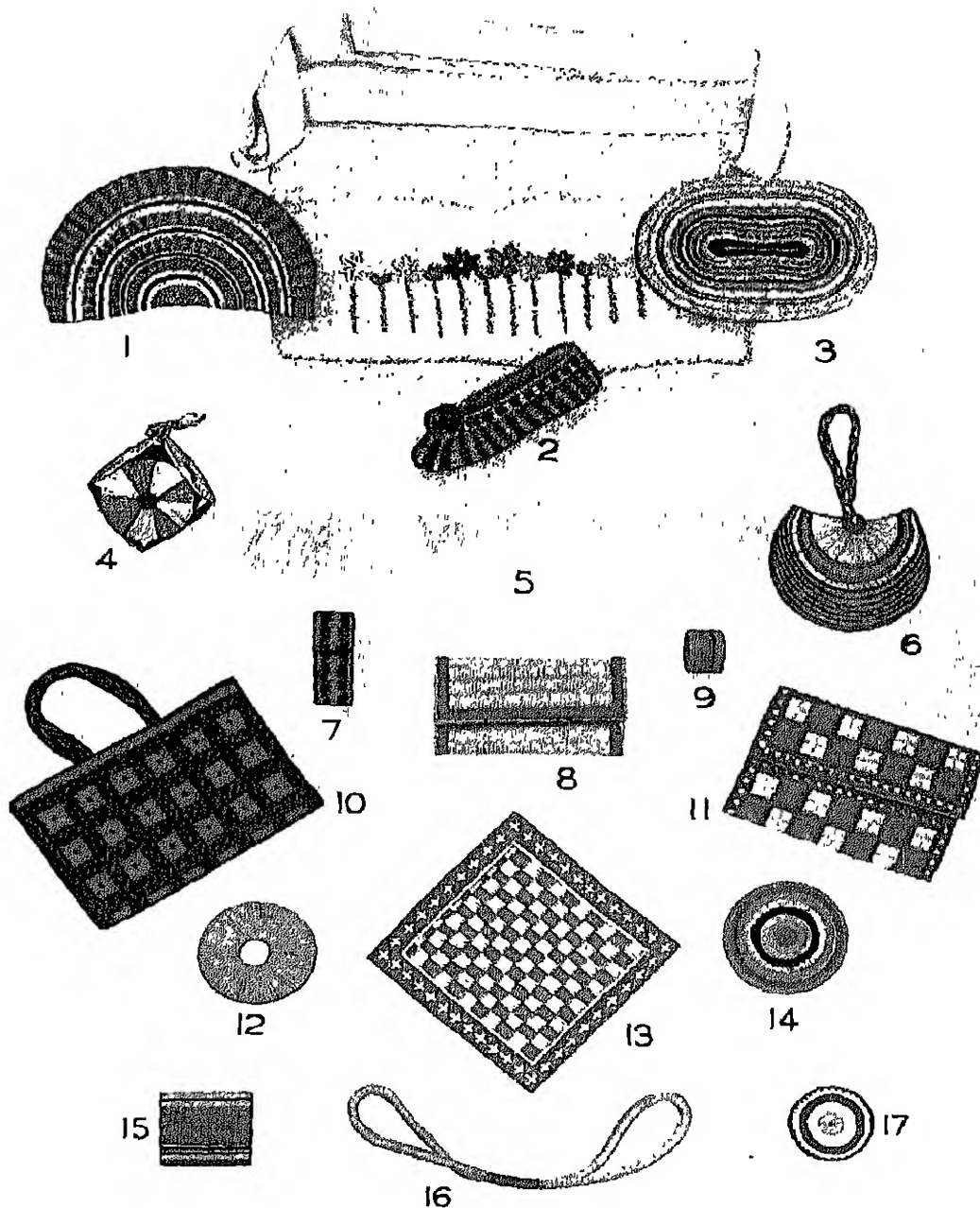
How to Thread the Foundation Strands. Thread a needle with a very long piece of macramé string, the longer the better, as there will be fewer joins. Tie the end to one of the rings very securely, and pass the needle through

the hole at the right-hand corner where the curve and base meet. Turn the cardboard over and thread the needle through the centre of the ring on the other side, putting the needle over the rim of the ring and bringing it out underneath, between the rim and the cardboard. If the ring is always threaded in this manner the weaving of the first rows becomes much easier. Now put the needle in the next hole, turn the cardboard, and thread the ring on the other side. Then pass the needle through the next hole and continue threading both rings in this manner until the corner of the left-hand side of the base is reached. All joins should be made with reef knots, as flat as possible. Fasten off the string by a secure knot round the ring. In order to prevent the horizontal strands from getting pulled out of position, tack the first three and the last three strands firmly to the cardboard about half way along and remove the tacking threads as the weaving progresses.

Preparation for Weaving the Tea Cosy. Having decided on the colour scheme, mark off the spaces for the colours on the cardboard under the centre vertical strand, e.g. green, orange, and black make a good combination, with green as the chief colour. From the centre base mark off 2 in. for green, $\frac{1}{2}$ in. for orange, $\frac{1}{2}$ in. for black, and $\frac{1}{2}$ in. for orange. Repeat these colours again, and fill in the remainder with green. Mark the other side in the same way.

Begin weaving in the usual way, taking up one strand and passing over the next. Leave an end of 4 in. in length, and when the first row is complete hold the beginning end with the right hand and pull the other end with the left hand. Pull this down until the raffia touches the ring. Cut the raffia leaving an end about 4 in. long, and work the next row taking up the threads left down in the previous row. Continue weaving in this way, leaving 4 in. ends to each row until the first mark on the cardboard is reached, and taking care to pull down each row as close as possible.

Introduce the second colour and proceed with the weaving as in the first colour. Although the height of the cosy is a little more than half the width, with continual pressing down it is not necessary to do any shaping. Press the threads well down with the left hand while working the



RAFFIA WORK PLATE

A GROUP OF OBJECTS WORKED IN RAFFIA BY JUNIORS

1. Sofa, 2. Bedroom slipper, 3. Table mat, 4. String box, 5. Gardening apron, 6. Handbag, 7. Comb case, 8. Pochette, 9. Table naphin ring, 10. Shopping bag, 11. Pochette, 12. Mat, 13. Table centre, 14. Mat-coiled raffia, 15. Purse, 16. Curtain loop, 17. Mat.

last few rows. These rows can only be finished by one or two stitches at a time. If more are taken up the strain on the foundation strands is too great, and they may snap. When the weaving of the first side is completed cover it

Then bend the inside piece in half and it will pull out quite easily. Turn up the ends neatly including the ring and tack firmly.

Lining the Tea Cosy. Cut out the lining the same size as the cosy. Four pieces the size and

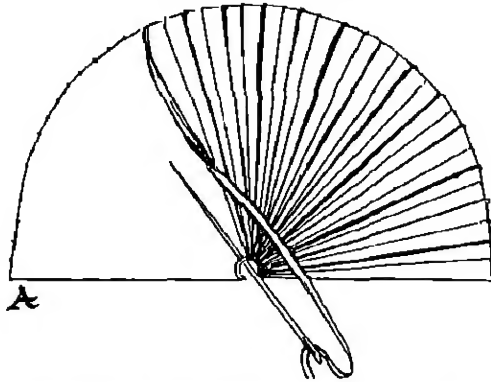


Diagram showing position of needle when stringing loom

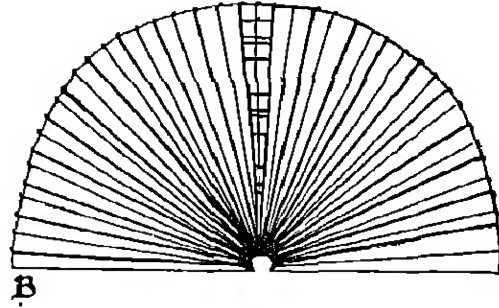


Diagram showing preparation for colour bands of weaving

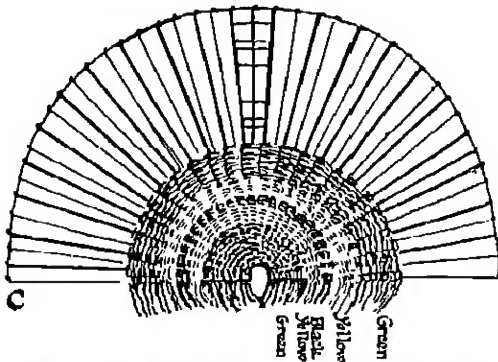
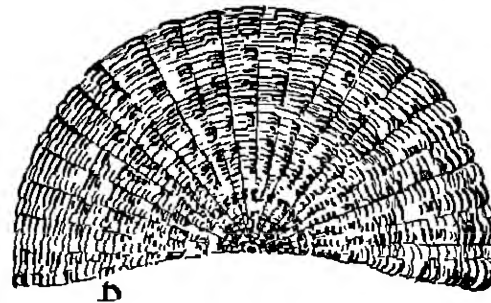


Diagram showing bands of weaving & ends of raffia



Finished Tea Cosy

FIG 17
Raffia Tea Cosy

with a piece of stout paper, tacking the paper to the edge of the cardboard. This prevents the raffia from becoming rubbed while the second side is being worked. Work the second side the same as the first.

Removing the Loom. Tear the cardboard gently away from the holes on the outside of the raffia.

shape of the cosy will be necessary—two for the underlining and two for the outside lining. The underlining can be of cheaper material. Cotton-wool is also required. Two pieces of this should be cut smaller, leaving an inch margin all round. Tack the cotton-wool securely to the underlining, then put two pieces together with the cotton-wool

facing. Stitch round the circular edge. Insert this into the raffia cosy and fix into it by tacking the open end all round. Turn up the inside edge of the lining over the cotton wool, leaving about a $\frac{1}{4}$ in. edge of raffia showing. The outer lining is stitched round the circular edge on the wrong side, leaving about 1 in. turning. Put this into the cosy, pressing it well in and stitching it here and there to the cosy in the circular seam. Finish off the edge by turning it in to the size required, taking care not to drag it or pull it too tightly. Sew it neatly to the raffia with slip stitches and fasten off securely.

3. *Raffia Handbag*

Preparation of Cardboard Foundation. The bag is worked on a cardboard foundation 9 in. \times 11 in. The bag is horse-shoe in shape, the width at the opening being 6 in., the widest part 7 in., and the depth 7 in. Draw these dimensions on the cardboard and pierce holes $\frac{3}{8}$ in. apart. Sew on a ring securely each side in the centre $\frac{1}{2}$ in. down from the top.

How to Thread the Foundation Strands. Macramé fine twine is the strongest medium for this. Thread a needle with a very long piece of twine and tie the end to one of the rings. Pass the needle through the top right-hand hole, turn the cardboard over, and thread through the ring on the other side, going over the rim and out under the rim. Pass the needle back through the next hole, turn, and pass through the other ring. Always thread the rings through the centre and bring the needle out underneath. Continue working round one hole at a time until the last hole is reached, and then fasten off securely with a knot on the ring. To join the twine use flat reef knots and leave inch ends. If the knot ends are cut too short they may give way. In working the bag leave all knots on the outside as that is the wrong side. The bag is turned inside out when finished.

Weaving the Handbag. The colour scheme should be decided upon and the cardboard marked down the centre strand each side to show the width of the various colours to be used. Thread the needle with the colour required, and take one foundation thread, miss one, take up the next strand, and so on, work-

ing about half way between the ring and the holes. When the first row is complete draw through very carefully with the left hand, holding the end with the right hand. Leave a 3 in. end and pull tightly down towards the ring. Work the second row taking up the stitches left down in the previous row and pull well down. The tighter the weaving the better will be the finished article. Continue weaving and pulling, change the colour when necessary, and proceed until it is impossible to weave any more rows between the ring and the holes. Push the raffia back with the left hand until it is impossible to insert the needle. Then begin to decrease. Commence the weaving on the third strand up and leave two the other end. Decrease one each end at each line until only three or four stitches are worked in the centre. Then begin on the fourth strand up and repeat the decreasings. Continue in this way until it is impossible to work any more rows. All the ends should be left outside, and they can be flattened down afterwards. It is a good plan to tighten all the rows at the end of each set of decreasings. Turn the loom and work the second side the same as the first, being careful to match the colours on the other side.

How to Remove the Loom. When the weaving is complete take off the loom by carefully tearing it away round the holes. Do not cut the cardboard in case the foundation strand should be snapped. Double the loom inside the bag and carefully pull it out. With the needle, push back into position any threads that may have been pulled out of place.

The Handle. Before making the handle press down all the ends as flat as possible, and if they are too long cut off a little. Turn back the ends round the opening and tack flat, pressing the edges well to get them as thin as possible. Cover the ring with raffia, working over and over. Turn the bag right side out and smooth into shape.

Make a plait 12 in. long and about $\frac{1}{2}$ in. wide, introducing all the colours used in the bag. The number of strands used depends upon the thickness of the raffia. Fix the handle to the rings leaving about 1 in. below the ring. The bag is now ready for the lining.

How to Line the Handbag. Cut out the lining the same shape as the bag. Make small running

stitches round the curved edge, leaving about $\frac{1}{4}$ in. turning. Turn down the top about 1 in., and the turning must be deeper than the rings. Fix the lining into the bag by slip stitches at the top, and put a stitch here and there round the circular edge to keep it in position.

4. *Raffia Slippers*

Raffia slippers, with a lining of wadding-padded sateen to match or contrast, and sewn on to lambswool lined leather soles, are most attractive, comfortable, and durable.

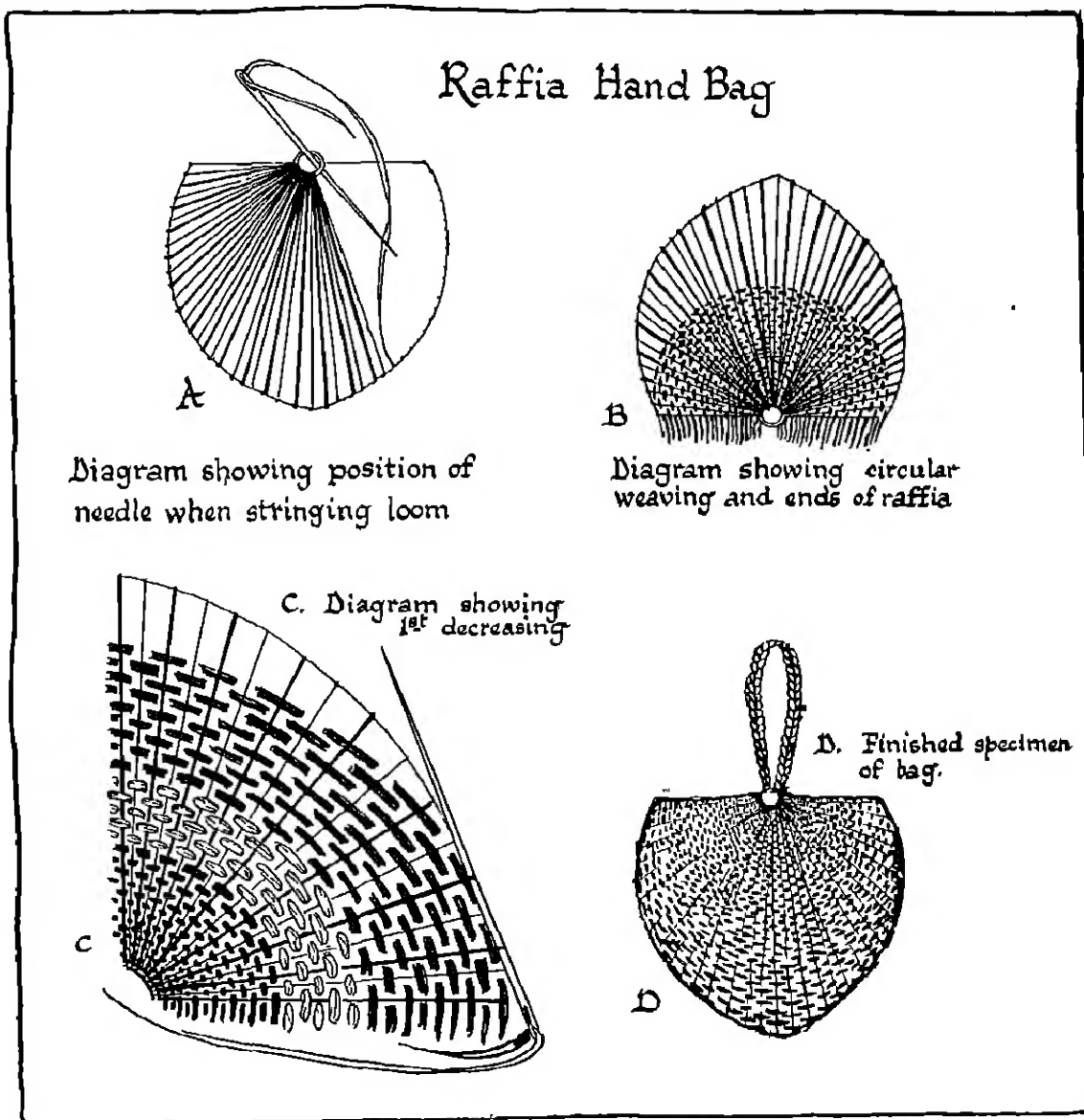


FIG. 18

The Loom. The loom for weaving the slipper shape is of stiff cardboard. Cards ready marked in sizes can be bought, but as they are sixpence each economy must be practised. It is wise, therefore, to invest in one pattern of the sizes likely to be required, from which at least two copies should be taken, marked clearly, and kept as stock-in-trade. Each slipper requires one card, which cannot be used again. Suitable sheet cardboard is supplied to schools. Failing this, a good source of supply is from a strong cardboard box, freely presented by obliging drapers. The *pattern* card is fixed by three brass paper fasteners on to a plain, stiff card measuring, roughly, 10 in. × 14 in. : one is put at the bottom and two near the top corners. This holds the two cards firmly in position, while the outer and inner rows of holes indicated are lightly pierced well through with a stiletto. The last holes of the outer and inner row, before the toe begins, joined by a straight line marked on the pattern, indicate the end of the straight sides of the slipper. When the pattern card is removed, it will save time spent in counting later, if the holes are numbered from one, upwards in pairs on each side to where the toe begins.

Instead of the brass ring which is usually fixed for passing the warp strands of the toe through, a raffia one can be used. It is cheaper and quite satisfactory, and can remain in unobtrusive comfort in the finished slipper.

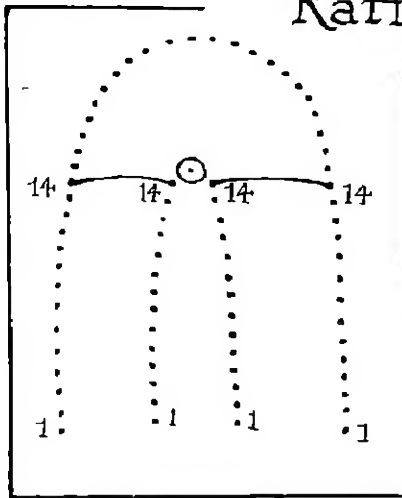
The Raffia Ring. A strand of medium width raffia about 15 in. long is wound closely round the first two fingers four times, then slipped off and held, while the long end is bound over and over all round this loose ring. It is then threaded through with a rug needle and cut off. The ring must now be sewn on to the card just between the last pair of inner holes, with thread, using three stitches: one at the bottom, one at the right, and one at the left. This care ensures that the strands for the toe will lie evenly round the upper half of the ring. At this stage, the warp of the loom is put on the card.

Preparation of the Warp of the Loom. It is most unsatisfactory to use raffia for this. The best thing for warp strands is fine macramé string, toning in colour with the raffia chosen, as it is firm and neither ravel nor stretches, and does not show when the weaving is closely

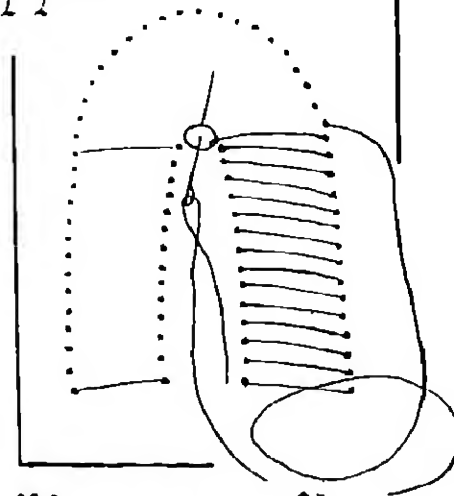
and well done. For this, a large rug needle will be found more satisfactory than a raffia needle. A 3 yd length of string should be used. To begin, the needle is brought up through the first hole at the right-hand outside row of holes, passed across, and down the opposite hole of the inner row, while the loose end is tied firmly in several knots at the back. The rows of strands look like a ladder on the front, while a series of short stitches from hole to hole are seen on the under side. A new length of thread should be joined at the back, the two ends being held together as one, and the knot exactly at the hole. Ends should not be cut off, as in working if a knot gave way the work would be ruined. A knot on the right side is awkward, as it is an obstruction when pushing the raffia weaving close. Children require to be warned of this beforehand. For the circular part of the loom, the thread is taken into the ring to and from the outer holes. In beginning this stage round the toe, the thread must come up through the first outside hole next to the last straight strand. In case the thread is at the inside row, it must be passed across underneath to the outer hole. When the first straight line on the second half is reached, the thread must come up through the outer hole, so that straight strands continue to the end, where the thread is firmly tied through the last stitch behind. A pair of slippers should be worked simultaneously; two workers can be employed.

Weaving the Slipper. A predominating colour, such as brown, looks well, with one or two contrasting colours, such as orange and green, introduced to form a band of pattern for the first part of the weaving. This is commenced at the inner side of the loom. Ordinary darning stitch is employed, that is, picking up alternate strands for one row, and reversing the order for the next. Great care must be taken that the first row is correctly done. It is best to use a flat raffia needle with a tuned up point. Round the circular toe, the strands are more easily found when picked up well away from the ring, to which the raffia is pushed up very closely afterwards. One length of good wide raffia for each row is preferable, ends 2 in. long or more being left every time. This makes for a smooth regular effect, as any long piece of raffia is usually very narrow at one end,

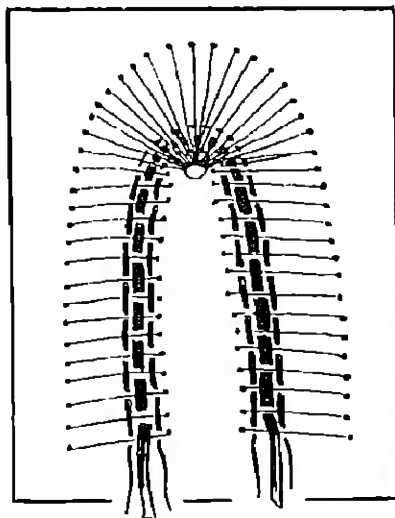
Raffia Slipper



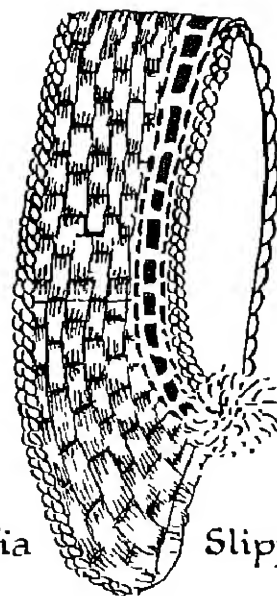
1. Holes pierced on card



2. Warp string of Loom



3. Pattern weaving



4. Raffia Slipper

and joins must be avoided in the middle of a row. The long ends are useful for pulling the weaving closer, and the fault of curving in the straight ends which form the back of the slipper is prevented. The weaving is made firm by pushing up the lines very closely together. This is especially difficult for the first inch round the ring where the warp strands are so near together. It is not sufficient to use the fingers or the raffia needle for pushing the raffia close to get a good shape here. A modelling tool such as is used in leather work is admirable for this. As the steel end is flattened and rounded it is not likely to spoil the raffia. A pattern band round the top is made after working six rows in brown, thus: three rows in orange, three rows in brown; one row in orange, and one row in green, alternately for eight times, one row in orange, after these sixteen; then three rows of brown followed by three rows of orange. The use of two colours in this order results in a pattern of small squares with two narrow bands above and below.

Larger squares are obtained by darning two strands over and two strands under for the seventeen rows only. The weaving is continued and completed in brown raffia. After continually pressing the rows as closely as possible until the sides are quite full, extra rows will be required to fill up round the toe, which must taper gradually to the end. For this, long pieces of raffia should be chosen in order to weave to and fro, as a thick bush of ends just here is difficult to manage during the making up of the slipper. Two or three short rows are done from where the sides are full up. The toe is gradually rounded off by decreasing the number of strands used, until the last few rows go over five or six, making a firm rounded toe.

Pattern variations can be introduced. Black and orange, or black and red, make for gaiety if worked in the main part next to the band of pattern, in alternating rows of the two colours. The result is a two-striped ray effect.

How to Repair a Broken Loom. A useful repairing hint may be welcomed. It is possible that the cardboard loom may begin to break before the completion of the weaving. Another piece of cardboard, 6 in. wide, should be placed behind the weakening side, fixed with paper

fasteners, and new holes made through the double card, about 1 in. from the old holes which are giving way. With a long needleful of double thread, the short stitches at the side of the loom can be caught through twice to keep them open wide, and securing them to the card patch at the new holes. As it is disheartening to scrap a nearly finished piece of work, this "doctoring" of the loom is really worth while. The finished slipper is taken off the loom by tearing the card carefully along the perforations as in a postage stamp. The raffia ring is released and cut in half. The cut ends will be tucked in afterwards between the raffia and the lining.

How to Make Up the Slipper. This making up of the slipper requires some skill, and is not within the capabilities of the younger children. It is most easily done in the following way. Unbleached wadding for padding and warmth is cut exactly the same size as the slipper shape. The thick bunches of raffia ends are cut to $\frac{1}{2}$ in. long. The lining requires an inch to be allowed all round for turnings. The wadding is pinned on to the lining, the overlapping edges of which are turned and tacked, thus fixing the padding, so these stitches must be left in. The lining round the narrow end of the toe is snipped fanwise to ease the turning, and must be kept flat. Thus completed, and laid with the wadding downwards on to the raffia slipper, oversewing is done round the outer and inner sides, leaving 1 in. each side to facilitate the joining of the backs. The raffia seam is done first, and requires very strong double back-stitching and pressing with the pattern joining evenly. The lining can now be folded over this, one side being turned in and hemmed down so that it fits smoothly round the heel. Brown silk cord makes a neat finish for the edge. This should be started at the front where the ends meet, and be fixed flatly underneath. A silk pom-pom is also added now. The sole is put on last. The slipper should fit round this easily and the two edges are oversewn with double silko. If the thread is too thick, it is difficult to draw through. It should be started at the back seam. A neat finish to the sole is given, if a firm plait, of 2 orange strands and 1 brown, is sewn strongly on both sides of it round the soft edge of the leather.

RAFFIA WORK ON CANVAS

1. Comb Cases

Materials Required. 1. A strip of single thread canvas 12 in. long and 2½ in. wide

2. Two different colours of raffia.

3. Raffia needle.

4. Material suitable for lining.

5. One press stud.

Short and Long Stitch Pattern. Overcast the strip of canvas. Count up five threads from the edge of the canvas, and work five oversewing stitches, passing over five threads each time. Then work three stitches passing over three threads. Repeat these short and long stitches to the end of the canvas. Turn the canvas round and work the pattern in a similar way along the other side. Fill in the space down the middle with oversewing stitches, using raffia of another colour. Work a border two threads wide, along each side. Turn in the edges and line the canvas. Fold up the case and fasten the flap with a press stud. Sew up the sides.

Waist belts, hat bands, curtain ties, and various useful articles can be made in this way.

Graded Length Stitch. Work these stitches of graded length in a similar way to the short and long stitch. For the first stitch pass over five threads, then over four threads for the next stitch, over three threads for the third stitch, over two threads for the fourth stitch, over three threads for the fifth stitch, over four threads for the sixth stitch, and over five threads for the seventh stitch, e.g. 5, 4, 3, 2, 3, 4, 5.

Work the pattern like this along the other side of the canvas. Fill in the space down the middle and make up the case as before.

2. Raffia Decorated Dinner Mats

The materials required are—

1. Brown Penelope canvas.

2. Raffia—suggested colours—black, fawn, and orange.

How to Begin the Pattern. The mats may be square or oblong. Turn a hem ½ in. wide all round on to the wrong side. Hem neatly in cotton or fine silk to match the canvas. On the right side work a border of small slanting stitches in black raffia on the top of the hemming

stitches. These stitches should be taken over one thread and slant alternately to right and left.

Below this work a line of orange raffia running stitches over four threads and taking up two

Raffia Comb Cases on Canvas

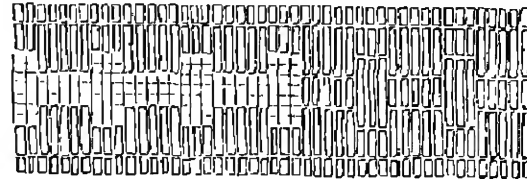


Diagram showing short and long stitches



Finished Comb Case

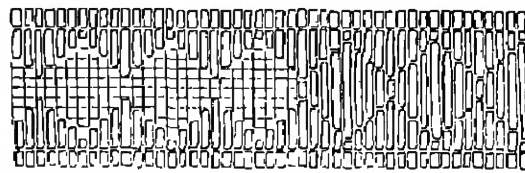
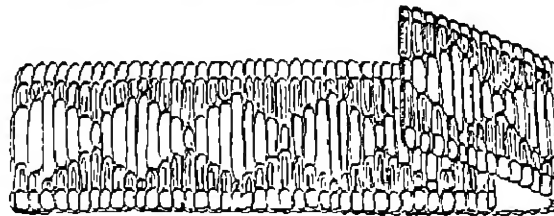


Diagram showing graded length stitches



Finished Comb Case

FIG. 20

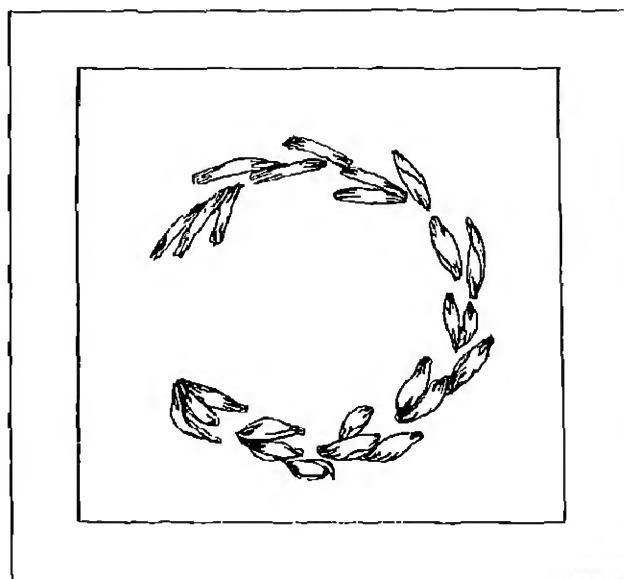
threads. One thread below work a similar line in black stitches alternating with the orange. Then one thread below the black line work a line of fawn stitches, alternating with the black. Mark out in lead pencil a circle in the centre of

the mat. The circle is more effective if not joined. Work this in orange raffia tacking stitches of varying sizes and spaces. On either side work small tacking stitches in black or fawn raffia to represent leaves. These need not



A

Diagram showing border of dinner mat.



B

Diagram showing centre of dinner mat.

FIG. 21

Raffia Decorated Dinner Mats

always touch the circle, and should be rather careless than formal. The back of the mat should be finished off very neatly, as it is not necessary to line these mats, although it may be done if preferred.

3. *Dinner Mats of Canvas and Raffia*

Attractive mats, to put under vegetable dishes on the dinner table, can be made of

canvas and raffia. Single mesh strong canvas should be used, and can be cut into different sizes, but should be at least 2 in each way larger than the size required. One narrow turning should be tacked down all round to

prevent the ends from fraying out. The design should be worked first at the outside edges, and at least four threads below the turning. A very bright-looking mat is made with red, yellow, and mauve raffia. A border of cross-stitch design is made all round the edge, and the space in the middle filled in with alternate squares of satin stitch in red and yellow raffia.

The red raffia is used first, and a good plan is to do the top line of crosses first, starting 3 down and 2 up, then doing 2 down and 2 up; and then fitting in the bottom row.

Each cross passes over two threads each way. When each corner is reached, the last 2 crosses must be made downwards, then the work is turned to the next side and 2 crosses made downwards again; then proceed as before.

When the diamonds are completed on the four sides the whole space in the centre of each is filled in with yellow crosses, 5 in each; followed by satin stitches of mauve raffia, which fill in the spaces between each diamond shape.

Children will count for this: over 2 threads three times, over 4 threads once, over 2 threads three times, miss one space where there is a cross stitch; repeat

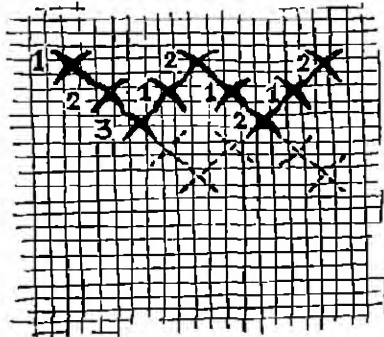
When this is finished a row of yellow cross stitches should be made on all four sides, on the inside of the border, and then the yellow and red squares of satin stitch worked. The number of holes in the centre should be counted and evenly divided. Six stitches over six threads each time is satisfactory, but it may work out better in different numbers. All the squares of one colour can be done first, leaving the spaces to be filled in afterwards with the other colour.

When all the raffia work is done, the tacking round the sides is removed, and the canvas hem turned wider so that the raffia border comes to the edge. Some of the canvas can be cut away from the underneath hems at the corners to make them lie flatter. A lining is then tacked to the mat on the wrong side, and oversewn with silky thread.

4. Raffia Bag in Graded Length of Stitch Pattern

The materials required are—

1. Medium Penelope canvas. 14 in. × 11 in.

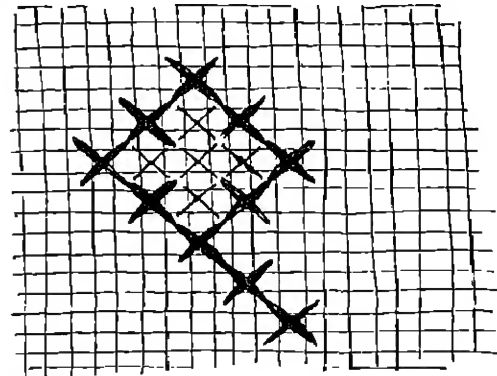


Beginning of Border
Dotted lines for 2nd
row crosses.

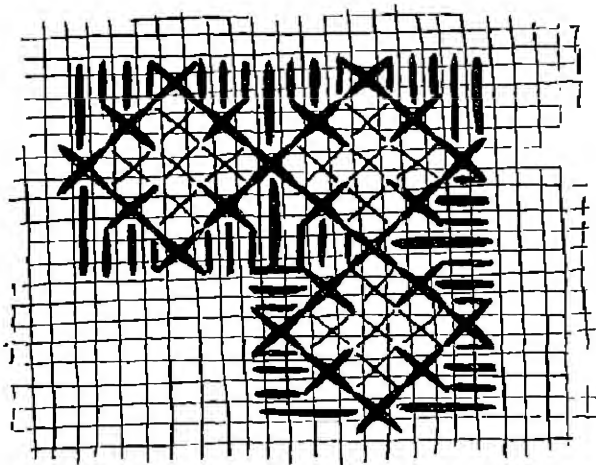
2. Raffia—suggested colours—royal blue and cinnamon.

3. Lining to tone with raffia.

Beginning the Pattern. This pattern consists of upright stitches over six, seven, eight, nine, and ten threads—then back again to six threads. Commence at the top left-hand corner. Besides allowing quite 1 in. margin from the top and side count eight threads down. This will leave about four threads above the highest stitch for a border of upright stitches over four threads. Continue to increase and decrease until the desired width is covered. For the second line turn the canvas upside down



Turning the Corner



A corner completed

FIG. 22
Canvas and Raffia Mat

so that the level line of stitches is uppermost. Commence at the same place, with the same colour, and each stitch will start in a hole made by the stitch in the previous line. Begin with six threads and each stitch in this line will be opposite a stitch of the same length in the first line, only in the opposite direction. The next two lines will be worked in exactly the same manner, but in cinnamon coloured raffia. The first cinnamon stitch will be ten threads below the first blue stitch. Keep the bottom line level and the top of each stitch will fit into the hole made by the blue stitch above it. Complete the line, then reverse the canvas as in the second blue line. Repeat the blue and cinnamon rows until the bag is the required size.

Level the stitches at both ends with opposite colour raffia. Finish the top and bottom with a border of upright stitches over four threads, using opposite colour raffia.

Finish the top edge by turning the canvas back leaving one thread above the row of upright stitches. Work this edge by two rows of over-sewing—first row left to right—second row right to left.

Make the handles, and line bag with sateen or shantung silk to tone.

5. *Raffia Bag in Varied Stitches on Rug Canvas*

The materials required are—

1. $\frac{1}{2}$ yd. of 12 in. Rug Canvas.
2. Two shades of green raffia
3. Green lining.

Beginning the Pattern. Turn down the edges on the third horizontal line and hem on the wrong side. Double the canvas and crease to find the centre, which will form the bottom of the bag. Work a row of ordinary cross stitch with alternate dark and light raffia. Work six rows of similar stitches each side of the centre line; this gives a firm foundation for many pattern bags.

The bag can now be worked either upwards towards the top, or from the top downwards. It is always best to leave the extreme top edges until the last.

Four threads down from the top of the bag is the starting place for a row of dark green stars

worked over two threads. The diagonals are worked first, then the upright stitch and, lastly, the horizontal stitch from left to right. Between each star one upright thread is left, and these are afterwards worked with a pale green cross stitch. Below this are two rows of graduated herring-bone stitch over two, three, and four threads, returning to two. The first row is worked in pale green raffia, and the second row in dark green.

Reverse the canvas so that the top becomes the bottom. The raffia used should be wide, so that the canvas is completely covered.

For the second row reverse the canvas again. The first line may not end with any particular length stitch, but this is of no consequence. To find the line on the canvas which will form the bottom of the second row, look for the longest stitch in the first row, and two threads below is the bottom line. Follow this line along to the selvedge on the left hand, and bring the needle through to the right side. The top of each stitch will fit into the holes made by the stitches in the first line.

Below this work a line of pale green herring-bone stitch worked over *two threads*.

Below this again work a line of dark green herring-bone stitch worked over *one thread*.

Next follows a line of alternate dark and light cross-stitch stars worked over three horizontal and two perpendicular lines. As before, the diagonals are first worked, then the upright stitch, and the cross stitch slants from the left top hole to the right lower stitch.

Now work two rows of alternate light and dark stars over two threads, separated by a row of dark green herring-bone stitch over two threads. The first side is now complete except the top edge. For this work a line of dark green herring-bone stitch over one thread.

How to Finish Off and Make Up the Bag. Oversew the top line with dark green raffia from left to right. Return from right to left with light green raffia. This gives a firm edge. Work the second side exactly like the first. Cut off the superfluous raffia at the back. Turn back the selvedges, hem on the wrong side, and mitre the turn at the corners.

For the HANDLES plait six strands of each colour raffia firmly, and evenly, and tie the ends.

Graded Length of Stitch Pattern for Raffia Bag

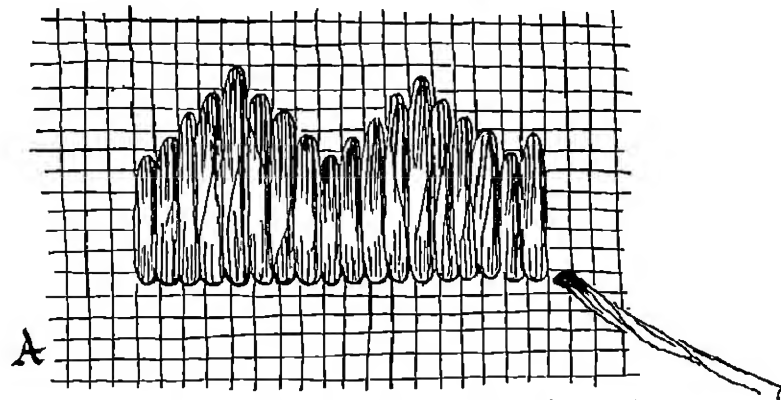


Diagram showing position and graded length of stitches in 1st line of raffia.

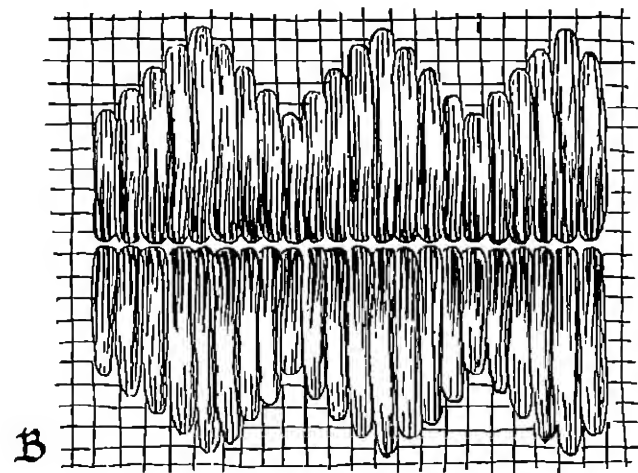


Diagram showing position and graded length of stitches in 1st and 2nd line of raffia.

Sew these on firmly and line the bag with green silk or sateen. Fix the sides first, then the ends, and hem neatly. Oversew the sides of the bag together with raffia. Tie a small knot, pass the needle through some of the stitches, and bring it out at the top front corner. Pass the needle through the opposite corner, and pull this stitch lightly, but gently, and see that the edges are

level. Oversew to the bottom, and to fasten off sew backwards toward the top.

6. *Raffia Bag in Eyelet Pattern on Rug Canvas*

The Materials required are—

1. $\frac{1}{2}$ yd. of 12 in Rug Canvas
- 2 Raffia — suggested colours — sea-green, black, and natural.
3. Lining for bag, pale green, black, or natural shantung.

Beginning the Pattern. Turn down a hem on the third horizontal line of the canvas and hem. See that the large holes correspond to those on the main piece as the pattern will be worked through the fold. Commence each coloured square in the centre. Each stitch covers two threads, and there are five stitches each side. With the green raffia bring the needle through to the right side six holes down from the top left-hand corner and four holes from the selvedge. This is the centre of the first green square. Make a straight stitch over two threads towards the top bringing the needle to the centre hole again. Make another upright stitch the same height, but one thread to the right of the last stitch, and again bring the needle through the centre hole. Make one more upright stitch one thread to the right as before. Now begin the second side, and each stitch is one thread lower than the last stitch. Repeat this until there are five stitches on that side, each over two threads. Turn the canvas round and work the next side until the square is completed.

For the second square follow the centre of the first and count four threads. This forms the centre of the new square, and when completed will leave two threads between the two squares. Repeat this until there are six green squares across the canvas. Squares 2 and 5 will be continued down the bag. Now place the canvas so that the selvedge is at the top and work a line of green squares on a level with No. 5 in the top row. Work until there are eight green squares level with the selvedge.

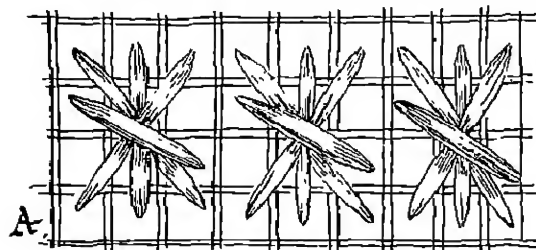


Diagram showing cross stitch over three threads, showing direction of centre stitch

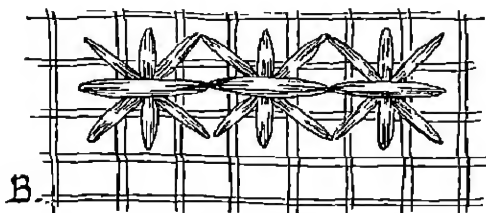


Diagram showing cross stitch over two threads, showing direction of centre stitch

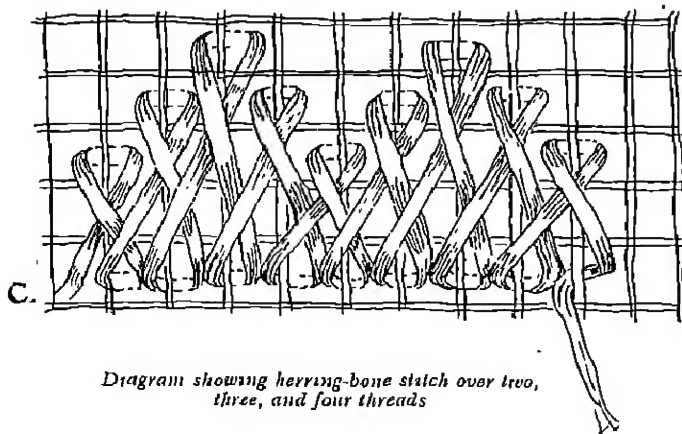


Diagram showing herring-bone stitch over two, three, and four threads

FIG. 24

Raffia Bag in Varied Stitches on Rug Canvas

Work a similar line continuing No. 2 square. Work the intervening green squares between 2 and 5, and make a complete horizontal line as at the beginning. Between each green square on the top line there are now two threads of canvas.

Place the bag with the selvedge at the top. Bring the needle threaded with black raffia out at the top green stitch, and work a row of herring-bone stitch, over two threads of canvas, the whole length of the bag to the last green stitch. The strands of raffia should be broad and flattened with the needle if necessary, so that the canvas is not visible. Work similar lines of herring-bone stitch in black raffia between each green square, and continue the whole length of the bag, always beginning at the top left-hand corner of the green square. There will be seven rows in all, the last being outside the last green squares.

Work a similar line in black across the top of both green horizontal lines of squares. Fill in the small spaces under the squares, with the same stitch. Each green square is now surrounded by a band of black. In between the long lines of black there are now left four threads running lengthwise under each green square. Fill in these with two rows of herring-bone stitch over two threads, similar to the black, using broad natural raffia.

How to Finish Off the Bag. At this stage of the pattern the bag is finished except the two top edges. Above the line of black, work a line of green herring-bone over one thread across the bag. The edge, which should be very firm, is now oversewn with green raffia, working from left

to right. Over this a row of black, working from right to left.

To make the HANDLES four or five strands of each colour raffia should be plaited firmly, and

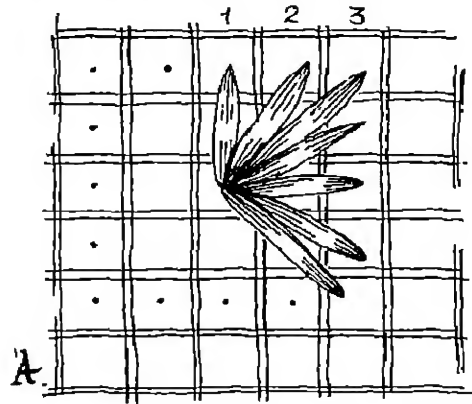


Diagram to show the beginning of each square

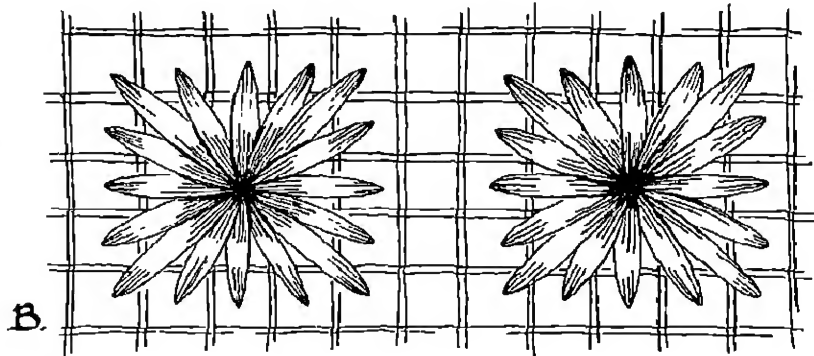


Diagram to show the completed square with space between for herring-bone stitch

FIG. 25

Raffia Bag on Rug Canvas in Eyelet Pattern

evenly, and tied with coarse cotton at the ends. The long ends of raffia at the back of the bag should be cut off. The selvedges at the sides should be turned back on the wrong side and hemmed with coarse cotton, but the stitches must not be allowed to show on the right side.

In order to get the correct position for the handles, divide the top edge of the bag into three and place the handles rather nearer the ends of the bag. Sew firmly with strong cotton, and flatten the ends as much as possible.

Line the bag with one of the suggested colours and fix the sides, then the ends, and hem neatly.

Oversew the sides of the bag together with black raffia. Tie a small knot and pass the needle in between the stitches, and bring it out at the top corner. Put the needle through the opposite corner and draw the edges close together. This stitch must be carefully done. Pull the raffia tightly, taking care that one edge of the bag is quite level with the other. Oversew to the end and fasten off by working back again over five or six stitches.

7. *Raffia Bags and Pochettes*

There are a few important rules to be remembered when working with raffia on coarse or fine canvas. These can be taught as necessity arises. The raffia used must correspond to the canvas; wide for coarse canvas and thin for the finer canvas. If the raffia used is too wide the stitches will be bulky; on the other hand, it must not be too thin or the work will look poor. The canvas must in all cases be covered, and sometimes a second stitch over the first is necessary.

Raffia is also inclined to twist after several stitches have been worked, but this can be remedied by twisting the needle round in the opposite direction.

The stitches should be flat, and the shiny side of the raffia uppermost. The stitches can be flattened by using the thumb or first finger of the left hand, also by placing the needle under the raffia when it is being pulled through the hole.

Never hurry over raffia work. Aim at never making a bad or false stitch.

Raffia Bag in Curved Stitch Pattern

The materials required are—

1. Medium Penelope canvas, 14 in. \times 11 in.
2. Raffia—suggested colours—three shades of violet and one in oyster.
3. Lining for bag, preferably oyster or light shade of violet.

Beginning the Pattern. Leave a margin of just over 1 in. on each side of the canvas. Begin at top left-hand corner. Every stitch covers six threads. Allowing for the margin, count twelve threads down and make one upright stitch over six threads. Allowing for the margin, count

twelve threads down and make one upright stitch over six threads. Then make two stitches the same height, but start three threads higher. Then three stitches the same height but one thread higher than the previous stitch. Then make four stitches in a line one thread higher. Next make three in a line one thread lower, then two in a line one thread lower still, and lastly one stitch three threads lower. This last should correspond exactly with the first stitch.

This curved pattern should be repeated until the desired width is attained, remembering the last stitch must be the single stitch which ends the complete curve.

Begin the second row six threads below the single stitch in first row. The top of each stitch will fit into the holes made by the preceding row.

The Colour Scheme. The first three rows are worked in three shades of violet, commencing with the darkest colour. These three rows are repeated until the first side of the bag is completed, with a row of oyster coloured raffia worked between each group of violet.

The second side should be worked in the same way commencing from the top.

The small stitches which will be seen at the top and bottom of each side can be filled in with the next colour—this will level the lines.

A margin or line of upright stitches over four threads can be worked in dark violet along the top of each opening. Cut off the untidy ends at the back.

How to Make Up and Line the Bag. With the right side of the work towards you, turn back the side edges level with the raffia and hem them flat. Turn the two ends in the same manner, mitre the corners of the canvas, and hem the ends flat. The HANDLES should be made of three strands of each colour raffia, plaited firmly and evenly, and carefully sewn on. The LINING should be of oyster colour if possible, or the palest mauve. Fix the sides first, then the ends. Oversew the sides with raffia, and see that the two top edges are level and pulled close together by the first stitch.

Raffia Pochette in Waved Pattern

The materials required are—

1. Medium Penelope canvas.

2. Raffia—crimson, red, orange, and chocolate brown

3. Lining—crimson or brown silk or sateen.

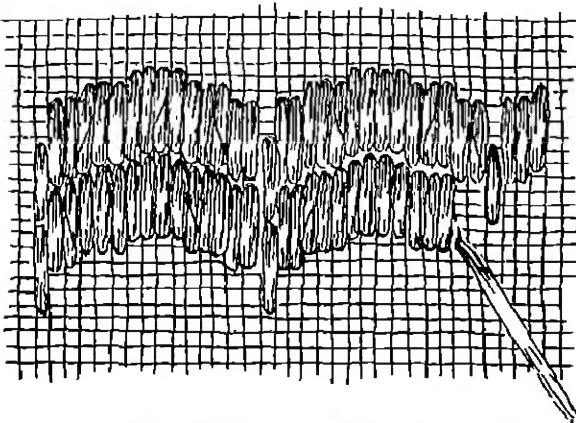
Waved Pattern. Allow a margin of 2 in. Commence at the top left-hand corner with crimson raffia. Every stitch is worked over six threads. The second stitch is begun one higher than the first, and the third one thread higher than the second. The next two stitches will each be one thread lower. Continue in this manner the

Line with red or orange silk or brown sateen. In bending the pochette to form the pocket a suitable line must be found to form the bottom. Finish off the same as the other pochettes.

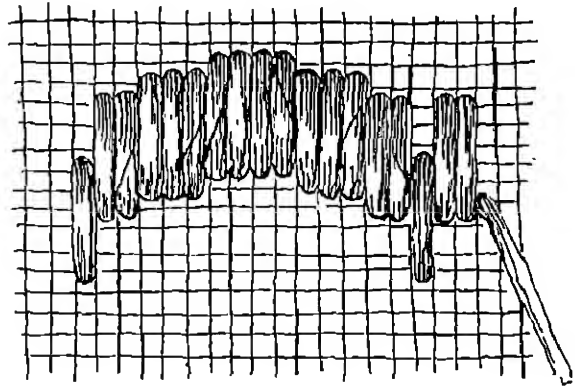
Raffia Pochette, Interlocking Stitch Pattern

The materials required are—

1. Medium Penelope canvas.



Curved stitch pattern showing two lines of raffia



Curved stitch pattern showing stitches enlarged

FIG. 26

Raffia Bag in Curved Stitch Pattern

width of the pochette, but do not forget to leave a 2 in. margin.

Begin the next row six threads below the first stitch, and use the orange raffia.

The third row should be worked in a similar manner in brown raffia.

Continue to work lines in this order until the pochette is of sufficient length. Level the two ends by working in the small stitches with the next colour raffia.

Round the pochette work a border of upright stitches over six threads in brown raffia. Mitre the corners as in the other pochette.

How to Finish the Pochette. Cut off the ends of raffia at the back and turn back the canvas on both sides. Cut this, leaving about $\frac{1}{2}$ in. turn and hem neatly, taking care that the stitches do not appear on the right side. Turn back the two ends and hem in a similar manner.

2. Raffia—suggested colours—yellow, blue, and green.

3. Lining—yellow shantung silk

Interlocking Stitch Pattern. The greater part of this pochette consists of interlocking stitches. In addition to the margin of 1 in., allow for two borders of two and six threads—eight threads in all. With the yellow raffia begin at the bottom left-hand corner and cover the canvas with upright stitches. Every stitch passes over six threads, but every alternate stitch commences three threads higher than the previous stitch. When the first line is completed, the canvas can be turned round and the second line commenced where the first finished. Care must be taken that the first stitch is six threads below the stitch in the line above. The small stitches left at the two ends of the pochette can be filled in afterwards. Round the yellow

stitches put a border of pale green upright stitches over two threads. Outside this put a border of royal blue upright stitches over six threads. The corners must be mitred. Work the blue border until the last yellow stitch is reached. Leave the corner, and make the first blue stitch over six threads on the next line. The tops of these last two blue stitches fit into the

ferred, and oversew the sides with strong silk to match the raffia.

Raffia Pochette in Darning or Tacking Stitch Pattern

The materials required are—

1. Medium Penelope canvas.

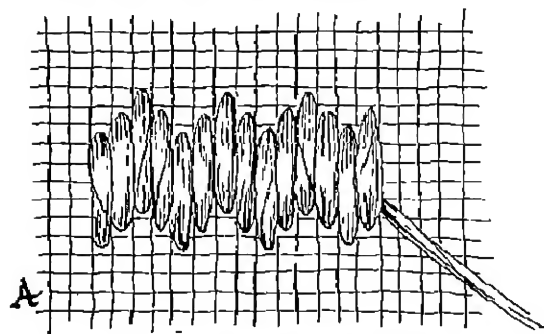


Diagram showing waved stitch

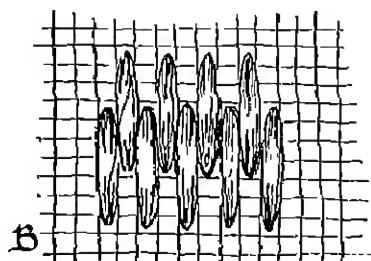


Diagram showing interlocking stitch

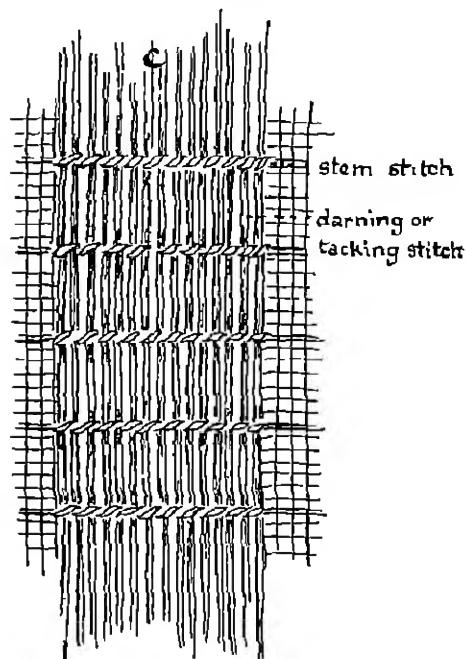


Diagram of darning or tacking stitch

FIG. 27

Raffia Pochettes in Waved, Interlocking, and Darning or Tacking Stitch

same hole. The corner can now be filled in—five stitches on each side, to be worked in pairs.

How to Finish the Pochette. When this border is completed, the long ends of raffia at the back can be cut off, and the margin turned back on to the wrong side. The sides should be turned first, part of the canvas margin cut off, and then hemmed. Do the same to the ends, taking care that white canvas does not show on the right side. Fix the lining and hem with silk of the same colour. To form the pocket of the pochette turn up one-third of it, or a little more if pre-

2. Raffia—suggested colours—pale green, pale orange, and brown

3. Lining—pale green or brown shantung silk.

Darning or Tacking Stitch. This pochette is one of the simplest to make, and consists of darning or tacking stitches. Allow 1 in. margin on the four sides of the canvas. With the green raffia take up one thread and pass over six threads. Continue this down the length of the canvas, leaving the inch margin at the bottom. Cut the raffia and leave the ends, top and bottom, 1 in. in length.

Work six green rows then three orange.

Repeat the stripes until the required width is reached.

The horizontal line of white canvas which appears across the pochette can be worked over by a "stem stitch" of dark brown or some contrasting colour. In working this it is better to hold the work over the first finger of the left hand. The long raffia stitches are then kept in place.

How to Make Up the Pochette With the right side of the work towards you, turn back the side margin level with the first line of raffia stitches. Cut off part of the turn and hem with large stitches, not too close together—care being taken that they do not show on the right side. Then turn back both ends on the second horizontal line. Cut off part of the turn and ends of raffia, and hem as before. Mitre the corners and cut away a little superfluous canvas there, so that the corners may be flat.

Line with the silk or sateen and fix the sides first, then both ends. The sides of the pochette, when doubled to form the pocket, can be oversewn with thin raffia or coarse silk. If raffia is used it is better to begin at the bottom of the pocket, then work along the top edge of the same and down the double edges again. This avoids "two beginnings" and "fastenings off."

Raffia Pochette in Mosaic Pattern

The materials required are—

1. Medium Penelope canvas.
2. Raffia—suggested colours—pastel blue, fawn, and dark brown.
3. Lining—brown or fawn shantung silk.

Mosaic Pattern This pochette consists of alternate blue and fawn squares. Each square consists of four small squares worked over four threads. The stitches in each small square are worked in the opposite direction. It is better

to work the centre stitch first. As these squares are small the raffia should be flat rather than thick. (See Fig. 28, page 1122.)

Leave two threads between each blue and fawn square; seven squares in a row with the border makes a good sized pochette.

Work a second row of squares, leaving two threads between it and the first row, and begin with a fawn square. There is now an oblong of fourteen squares separated from each other by two threads. Round this oblong, beginning at the top left-hand corner, work a line of cross stitch in brown raffia over two threads. Fill in with cross stitch in the same colour the spaces between the squares.

Round the oblong work a second row of cross stitch over two threads, this time in alternate stitches of fawn and brown. Then work a third line of dark brown cross stitch as at first. There is now a border of three rows of cross stitch. Now work a similar oblong of fourteen squares—seven in a row. Commence with a blue square which will touch the brown line of cross stitch, and be exactly under the squares in the first oblong. Work the cross stitch between the squares, as before, and complete the border. This completes one-third of the pochette. Continue working in this way until there are twelve rows of squares.

How to Finish the Pochette. Cut off the superfluous ends of raffia at the back, and, with the right side of the work towards you, turn back the canvas at the sides level to about $\frac{1}{2}$ in. Do the same to both ends, mitre the corners on the wrong side, and cut away the superfluous canvas. Fix the lining and hem with silk of the same colour. To form the pocket of the pochette turn up one-third of it, and oversew the sides with coarse or double brown silk to match the raffia. When finished, press the pochette for a few hours under a heavy weight.

RAFFIA WORK ON MADAGASCAR GRASS CLOTH

Madagascar grass cloth is very suitable material for handwork, for children from 9 to 11 years of age. Very useful shopping bags, that are attractive also, can be made.

Madagascar grass cloth is bought in the piece,

18—(E.3665)

about $2\frac{1}{2}$ yd. by 20 in. The bags can be planned from it, teachers helping the children. A useful size is 12 in. \times 12 in. when finished. This means that two pieces must be cut, at least 26 in. \times 14 in., to allow for turnings of 1 in. all round.

On each of the two pieces, hems are turned once and tacked, first making sure that the two pieces exactly match in size. One piece can then be set aside until the decoration on the other is finished. The decoration is done in raffia. The piece to be decorated is doubled in half. One side can then be more elaborately decorated than the other. Children can be allowed to make their own designs, either painting them or working in pastels.

A simple design is made by working a border of running stitches, about 1 in. from the edge, in two colours, side by side. Loop stitches in another harmonizing colour can be made in all the corners, one long stitch diagonally, and two short ones, nearly straight, along each side.

This amount of design can be done again on the other side of the bag.

Suggested colours are: red and black, with red or black loop stitches, blue and black, with yellow or orange loop stitches; blue and grey with mauve loop stitches.

An extra design can be put in the middle of one side of the bag if desired. Loop stitches and Y-stitches can be combined to make an effective design.

In the middle, one Y-stitch on each of the four sides should be put first, and the next four put between them.

Pencil dots can be made by the children under the teacher's supervision to ensure the regularity of the design.

A raffia needle or a crewel needle can be used. The raffia must be pulled through the cloth gently by the left hand, while the needle is held under the stitch to make it spread out nicely. In order to do this the work must be flat on a table.

The design having been completed, the handles must be made. Thick raffia should be chosen in the colours prevailing in the design, and plaits made. A knot is made at one end, and this end can be held tightly by one child, while another

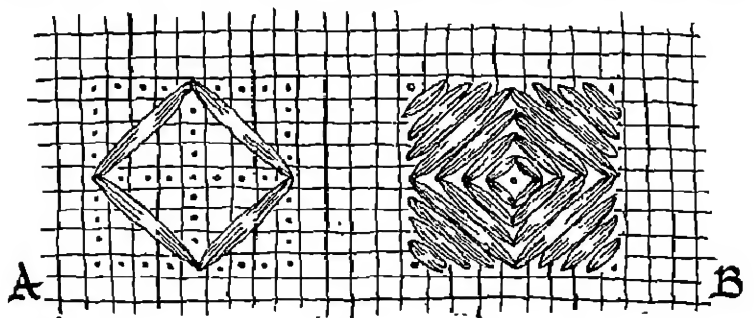


Diagram showing direction of centre stitch in each of the four small squares

Diagram showing the four completed small squares

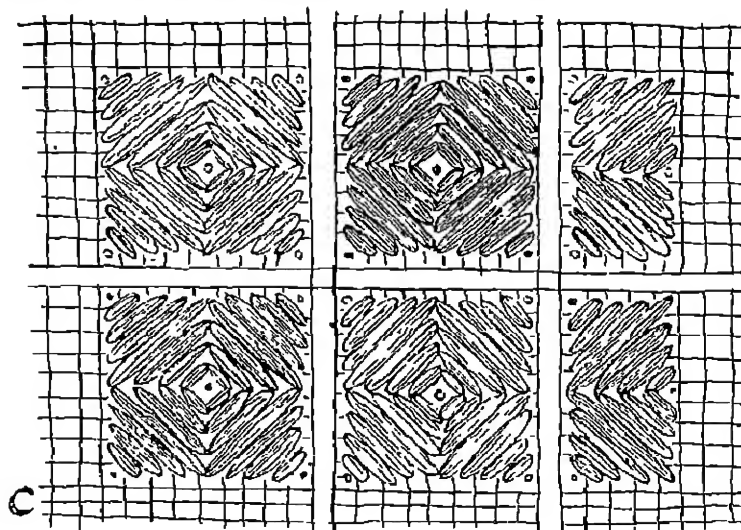


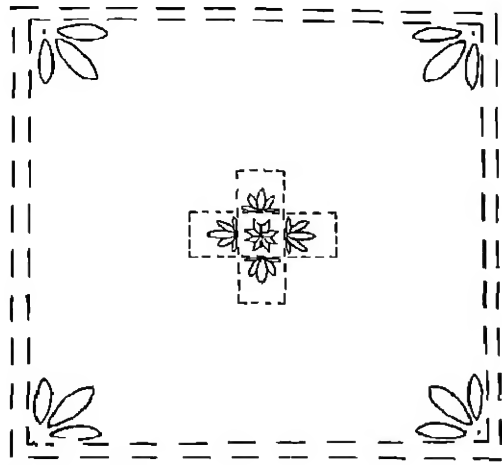
Diagram showing alternate squares of mosaic pattern with space between for cross stitch

FIG. 28

Raffia Pochette in Mosaic Pattern

plaits. The handles can be made stronger by oversewing two plaits together, or by weaving together three plaits, or a four-handed plait, which would be round, could be made. Handles should be about 18 in. long. When made they should be tightly bound round with raffia at

the ends, and then each end is sewn to the short side of the undecorated grass cloth, about 2 in.



Design for bag, made of
Madagascar Grasscloth.

FIG. 29

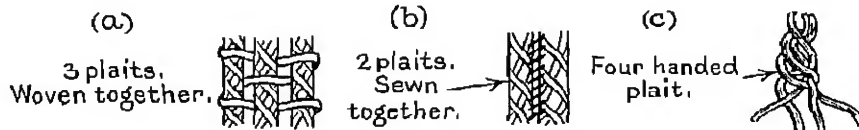


FIG. 30

Raffia Handles



FIG. 31

Four-handed Plaiting

Notice how the hands are placed.

from each end, and about 2 in. down. They must be sewn firmly along each edge, and several stitches must be put along the middle.

The inside and outside of the bag are now ready to be placed together. They must be tacked together, and oversewn with raffia. When oversewing the top edges, several stitches must be put through the handles to give an added firmness. The needle has to pass through four thicknesses along the sides, so the raffia must be drawn very gently through, or it will fray. It is a good plan to oversew in two colours, putting the second colour in between two stitches of the first colour, or the second colour can be sewn backwards, producing a cross stitch.

A Four-handed Plait

A four-handed plait is made by two children, with a third one to hold the plait steady. Each child has a number of strands in each hand, according to the thickness desired. All the strands are knotted together at one end, which is held by one child. The two children making

the plait stand side by side, with the left arm of the child on the right under the right arm of the child on the left. The child on the right changes over the strands from one hand to the other, left over right, taking care to keep her left arm under her companion's right arm. The child on the left then does the same right over left, but takes care to keep her arm above her companion's left arm. They continue to do this alternately until the plait is long enough. They must keep the raffia taut *all the time*, to make the plait firm.

(This plait makes a very useful cord, when made of D.M.C. or other silk, or silky threads, and can be used to thread through eyelet holes of tunics, or to make an edging round pin-cushions.)

A Gardening Apron

Madagascar grass cloth usually has fringes of the threads along the short sides. This fringe may be kept when making a gardening apron,

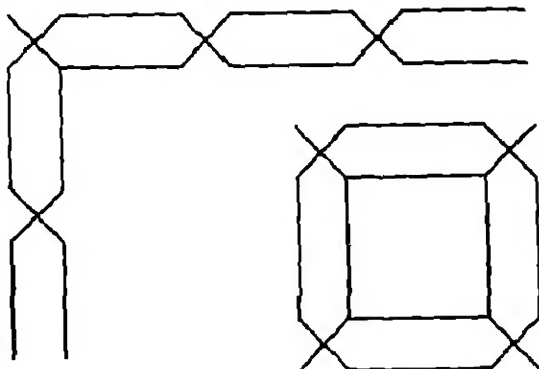


FIG. 32
Design for Cushion Cover

which will be useful for holding bass and scissors, when tying up plants in the garden.

An oblong piece the required length should be cut, with the fringe on one end, and a narrower piece about 8 in. for a pocket. The pocket can be decorated. A row of daisies of different colours, made with raffia, with green stalks and leaves forms work for several lessons. The petals of the daisies are made

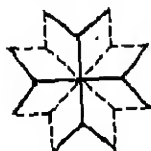


FIG. 33
Running and Y-stitch Design for Centre of Cushion Cover
in loop stitch, forming an oval, the space in the centre being filled in with yellow satin stitch. The pocket is attached to the apron along the two short sides and one long side by running stitches of raffia, a second row covering the spaces first left, making the joining stronger. A line of the same stitches down the middle of the pocket is an advantage, to prevent it sagging in the middle.

A long band of unbleached calico is sewn to the top of the apron. This must be done in

D.M.C. (on any thread preferred), and any fancy stitch can be worked along the edge to fasten it firmly. The band should be longer than the short side of the apron, to tie at the back.

Cushion Covers

Cushion covers to use on garden chair cushions may also be made of Madagascar grass cloth, decorated with raffia. Pillar-box red forms a bright contrast to the cloth. A border can be made round a square of the cloth, and a geo-

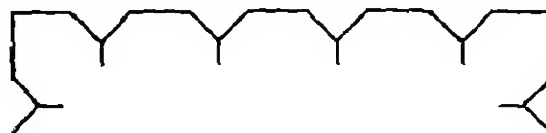


FIG. 34
Running and Y-stitch Design for Cushion Cover

metrical design put in the middle. The border might be two rows of rather large running stitches with a cross stitch between. Then the middle design could be a small copy (see Fig. 32).

Contrasting colours can be used; the straight stitches could be black, and the cross stitches red or green; or *vice versa*.

Y-stitches also make an effective border for a cushion cover, combined with running stitches, and a small copy of the border in the centre completes the design.

It is best to do the running stitches all round the cushion square first, and put in Y-stitches all round afterwards. The corner stitches must be running stitches. The second stitch made in each corner must be a back stitch to make an exact square corner.

These cushions when completed can be stuffed with raffia which has become ravelled, or is too thin to use, which would otherwise be thrown away. Pieces discarded can be put into a bag to be kept clean until they can be so used

LIGHT WOODWORK

LIGHT woodwork may be considered as a form of handwork for the classroom, but it is a particularly admirable type of practical work for the handwork room which is being provided in many of the new Junior Schools. The early stages of woodwork as taken in the specially equipped handicraft room may also be considered as a form of light woodwork, but this chapter is not intended to deal with the beginnings of the more advanced work carried on by the specialized teacher; it will deal only with such methods of woodwork as can be taken in the ordinary classroom or the general handwork room with simple and inexpensive equipment.

The early schemes of light woodwork were mainly concerned with what was termed "strip-work," and consisted in the main of cutting off strips of prepared wood with a light form of dovetail saw, and nailing the strips together to form a model, more or less useless. The main point in its favour was that it entailed a certain amount of measurement, and simple ruler drawing could be carried on in conjunction with the practical work. A later development introduced simple toys and a simple form of fretsaw, and in this connection a considerable amount of useful work was carried out.

Adapting Woodwork to the Junior School

It is hardly possible, even in a general handwork room, and certainly not in a classroom, to consider the possibility of planing wood; it is, therefore, an essential that prepared material should be used. The use of ready-planed wood does away with the necessity of a heavy bench and also the jack plane, thus enabling younger children to undertake quite interesting work. The availability of plywood in different thicknesses supplies the material for larger work than is possible with strips, and, apart from the possible use of a small smoothing plane, it is possible to do a lot of work on the desk or a light table.

Aims of the Course

One of the essential features of any form of handwork is that it should be practical constructional work, involving the use of tools and various media. In practice it requires thought and training in design, and aims at securing skill, power, accuracy, and appreciation of art and craftsmanship. It should develop creative thought and be a means of evolving in the child a ready adaptability to conditions, but above all no scheme of handwork should be a separate entity, it should be an integral part of the ordinary school curriculum, and be a means of opening up the mind to a wider outlook.

The association of handwork with practical design is an ideal to be aimed at in arranging any scheme, and in dealing with light woodwork the possibilities of carrying on practical pattern design with the constructional work should be thoroughly considered. A considerable amount of work involving simple decoration is possible, and the value of actually working out a pattern on the material cannot be over-estimated. The work of the art class can be carried on, to a great extent, in the handwork room, and light woodwork can be made to form a useful medium for particularly interesting work.

An important principle to be considered in every form of handwork is that of fitness for purpose. Much of the light woodwork carried out in the past would not stand the test of this essential principle. It does not necessarily mean that the use of strips of wood does not lend itself to the making of small articles, but at least the articles made should be properly made. Small models of household furniture often form an important feature of light woodwork, but if they collapse at a touch they are of little use as models and only serve to disappoint the maker, and eventually find their proper place with the firewood, to say nothing of the waste of effort.

Many of the decorative processes can be carried on in conjunction with light woodwork for example, the earlier work in stick-printing can be developed, stencilling with stains instead

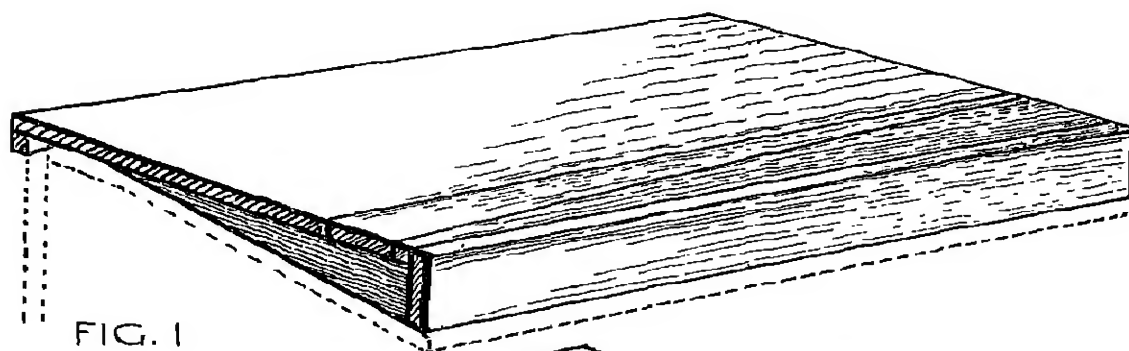


FIG. 1

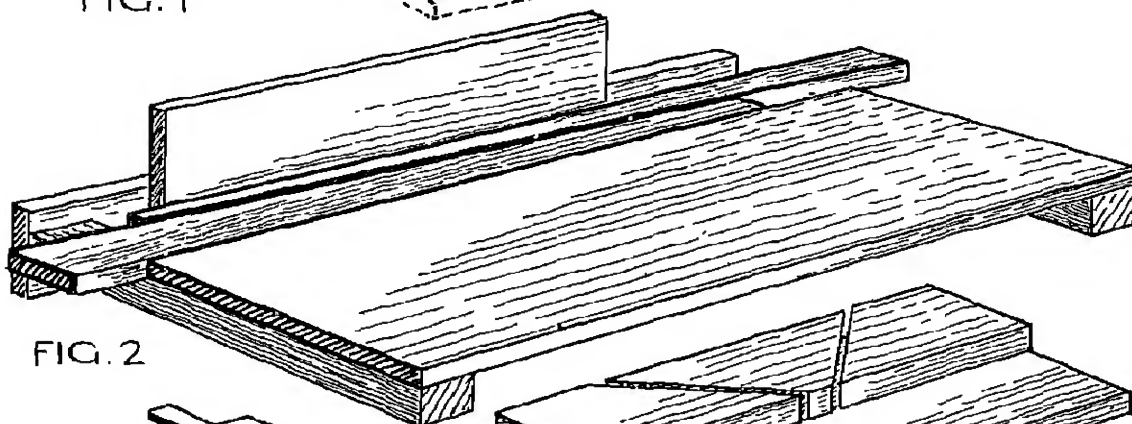


FIG. 2

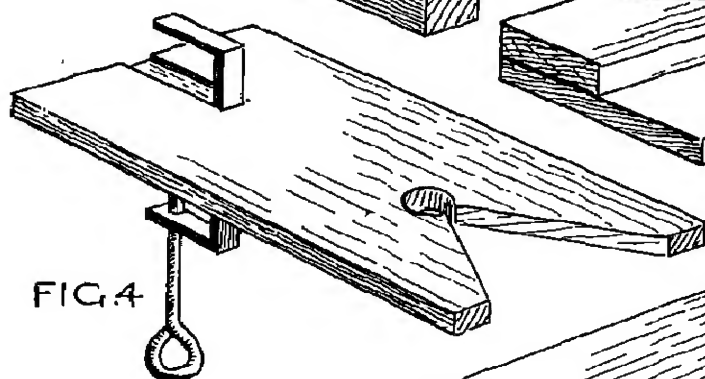


FIG. 4

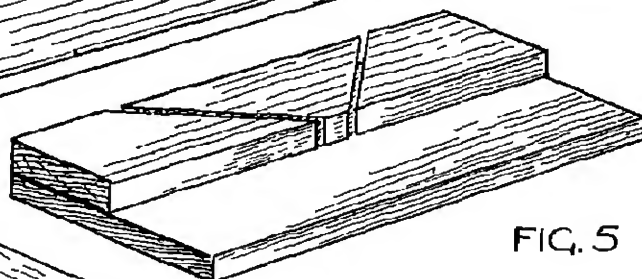


FIG. 5

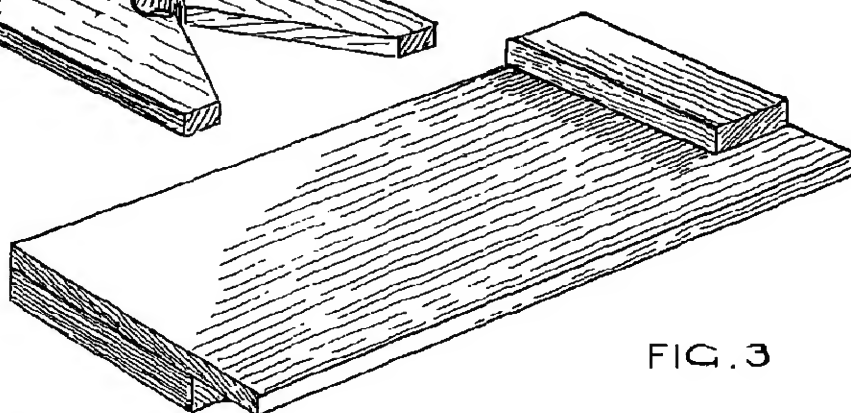


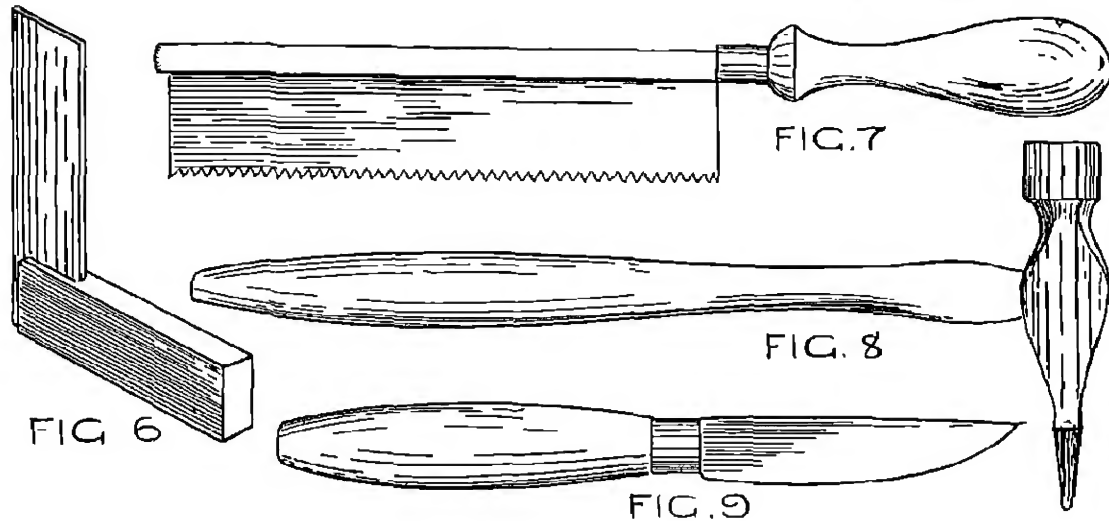
FIG. 3

Work-table (1 and 2); Sawing-boards (3 and 4); Mitre-block (5)

of paint provides a suitable means of decorating, and in addition some very interesting work can be developed by the use of gesso paste. Thin pewter may also be used with advantage, but, instead of being used to cover the wood, it can be used to enhance the material and to supply constructional features. It is possible to use thin copper and even thin brass in the same way.

Referring again to the principle of fitness for purpose, it should be understood that its application to methods of construction is as important

the ordinary sloping desk, so that a level surface is provided, and even with a room specially adapted for the practice of several forms of handwork the table or light benches should be protected against the action of the cutting tools, especially the saw. Several forms of workboards suitable for light woodwork are obtainable from the educational supply firms; it is essential that the workboard should be provided with a vice, either a side screw vice or some reliable form of wedge vice. As sawing, drilling, etc., will be



Try-square (6); Tenon Saw (7); Light Hammer (8); Knife (9)

in light woodwork as in any other form of constructional work. The material should be approached in the same way as in the working of other material. At the outset it must be recognized that there are distinct limitations in the tools and equipment; it is, therefore, undesirable to attempt forms of construction that can be carried out more suitably with different tools and more suitable equipment. It is also inadvisable to attempt the construction of articles that ought to be made with thicker material and the joints of the carpenter and the joiner.

Equipment

The question of equipment is an important one. A suitable covering can be provided for

done, each desk should be provided with a special board for the purpose; it is more economical to have a board that can be frequently renewed with little cost than to use the work-table.

Figs. 1 and 2 illustrate a convenient form of work-table suitable for the ordinary school desk; it is provided with a simple form of wedge vice forming part of the top of the table when not required for woodwork, so that the table can be used for other forms of handwork. Fig. 3 illustrates the usual form of sawing-board suitable also for use when using the drill. The board shown in Fig. 4 is convenient to use with the framesaw, and is used with a cheap form of G cramp, and can be attached to the work-table. If large tables are available in a specially arranged

room for general handwork, the work-table can be dispensed with, provided some form of vice is available. The light form of metal-workers' vice is suitable for much of the work, but the inside of the vice jaws should be covered with angle

(Fig. 6), also of metal if possible; a light form of tenon saw (Fig. 7), one with a grip handle being preferable to the round-handled saw; a light hammer (Fig. 8); and a knife (Fig. 9), which may also be used for cutting thick cardboard.



FIG. 11

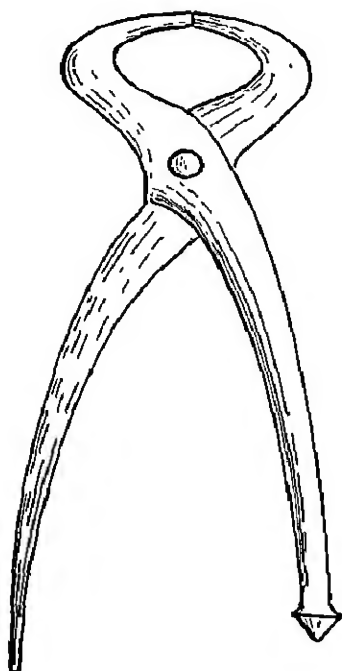


FIG. 13



FIG. 12

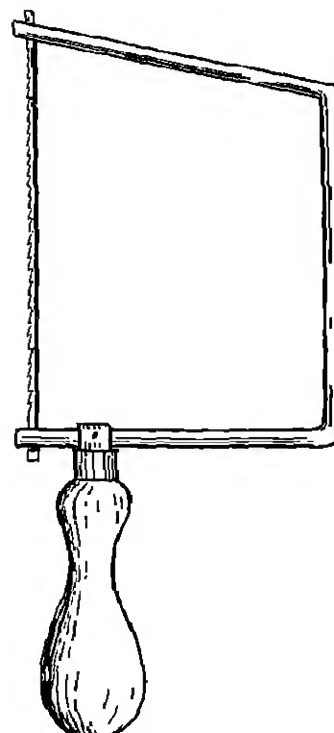


FIG. 10

Framesaw (10); Spokeshave (11), Chisel (12); Pincers (13)

pieces of thin lead or tinned plate. In any case the sawing-boards will be required. A useful form of mitre-block is shown in Fig. 5.

Generally there is no need to supply a complete set of tools for each child, although it is convenient to do so. One kit between two may be made to answer. The essential tools that each child will use regularly are as follows. A 12 in. rule, preferably of metal; a small try-square

There are certain other essential tools that should be provided in about the proportion of one to each six children. These include a framesaw or fretsaw (Fig. 10); a fairly cheap form of framesaw is available that is made to take an ordinary fretsaw blade, but it is possible to obtain an adjustable frame so that broken blades can be used up. It is somewhat doubtful if the increased cost of the adjustable frame is worth

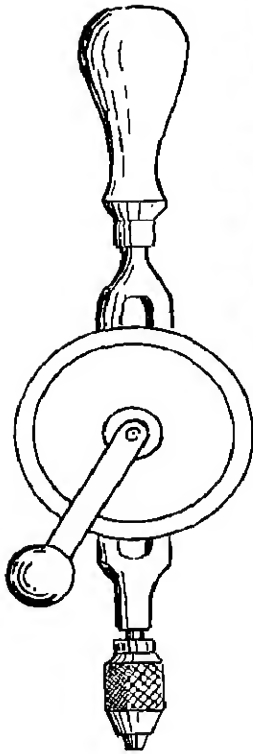


FIG. 14

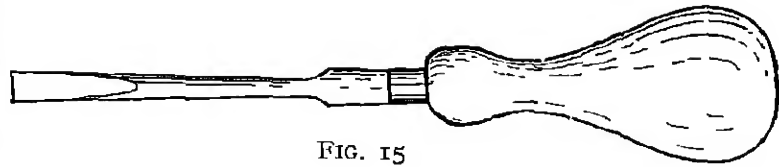


FIG. 15

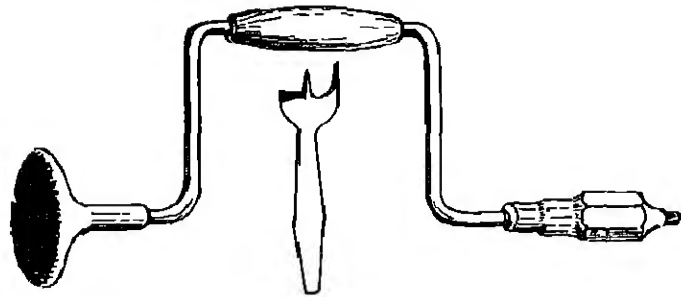


FIG. 16

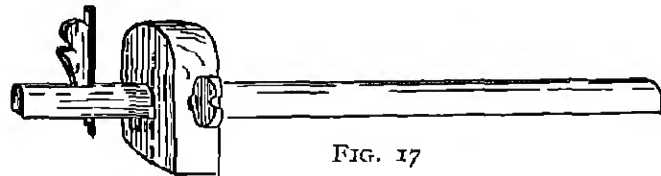


FIG. 17

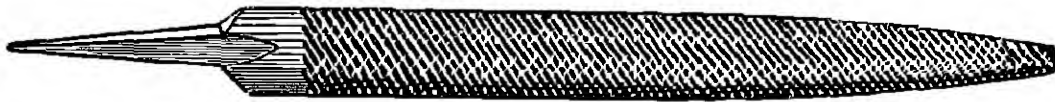


FIG. 18



FIG. 19

"Millars Fall" Geared Drill and Bit (14); Screwdriver (15); Brace (16);
Cutting Gauge (17); Half-round File (18); Cabinet Rasp (19)

while, as the saw-blades are so cheap. In any case the ordinary fretsaw frame with the deep opening is quite unsuitable for young children, but one or two of these frames may be included in case they are called for, they are inexpensive. Two forms of spokeshave should be provided, one for inside and the other for outside curves and flat surfaces (Fig. 11). A single-iron small iron plane is advised by some authorities, but for all ordinary purposes the spokeshaves will

be useful when dealing with thin wood. It is as well to provide one of each kind of file, such as round, half-round (Fig. 18), flat, and a cabinet rasp (Fig. 19). A double-sided carborundum stone, having a smooth and a coarse surface (Fig. 20), will be needed, as also an oil can. One or two veneers (Fig. 21) and gouges should be added, and for cutting thin metal it is advisable to have a pair of tinman's snips (Fig. 22). A marking gauge or two can be added if desired.

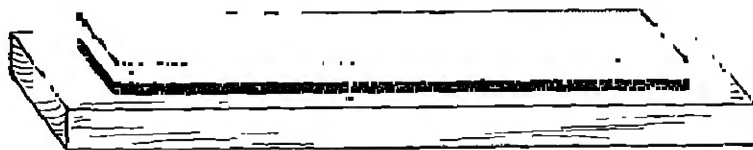


FIG. 20

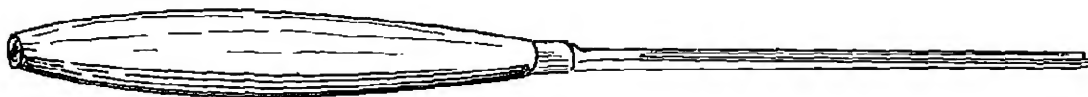


FIG. 21

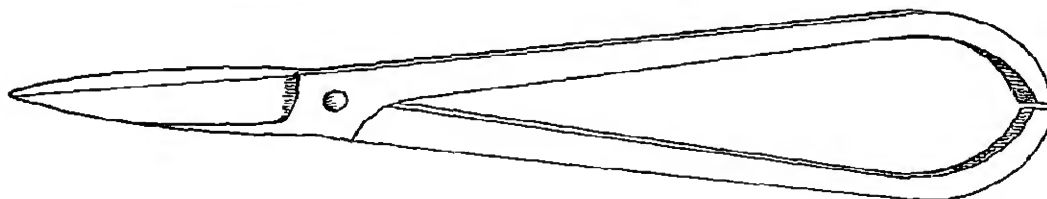


FIG. 22

Carborundum Stone (20); Veneer (21), Tinman's Snips (22)

suffice. Two chisels (Fig. 12), one $\frac{1}{2}$ in. and one $\frac{3}{4}$ in., will do for a start, but it is certainly convenient to have some of the sizes in between. A pair of cutting pliers may be added, as also ordinary pincers (Fig. 13). A drill with a supply of small bits will be necessary; the ordinary archimedian action can be obtained very cheaply but the cheaper form of "Millars Fall" geared drill (Fig. 14) is so much more convenient to use and more economical in the end that its use is recommended. A small screwdriver (Fig. 15) is a necessity.

One each of the following tools should be stocked, if possible. A brace (Fig. 16) with a supply of centre-bits: $\frac{1}{4}$ in., $\frac{1}{2}$ in., $\frac{3}{4}$ in., and 1 in. will do at first. A cutting gauge (Fig. 17) is

and also some bradawls and gimlets, but with a drill these hand boring tools will not be required.

The cost of the above equipment for a class of forty children should not amount to more than £12, but a better quality at an expenditure of about £15 would be advisable. Much depends on the way the tools are stored and cared for when in use, but with ordinary care the cost of upkeep of tool equipment should be very small after the first outlay. Such consumable material as saw blades, drill bits, and files will require renewing from time to time, otherwise the equipment will last for many years. Suitable cupboard room should be provided and trays or racks supplied, so that the tools can be stored without damage and are easily accessible.

Material

Supplies of material may be found rather difficult, especially in rural schools, although many of the educational supply firms keep a large stock of suitable wood. Wooden packing cases made of sound and smooth wood of good quality can often be obtained, but as a rule packing cases are made of rather hard and knotty material and are generally quite unsuitable. Prepared material such as dowelling, planed trellis wood, planed laths, and thin match-boarding can be obtained without much difficulty and are inexpensive; but well-planed timber, free from knots and cut to special sizes, is rather expensive, and care should be exercised in ordering. Plywood of all kinds is not expensive, and it is possible to obtain plywood faced with such timbers as oak, walnut, oregon pine, birch, and other decorative wood. Thin wood up to $\frac{1}{4}$ in. thick can be obtained in mahogany, sycamore, satin walnut, oak, chestnut, beech, etc., planed on both sides for use in fretwork. Sycamore, white chestnut, and satin walnut are the cheapest and quite suitable.

There are many varieties of machine-made mouldings and beadings available for use in light woodwork, corner moulding can be used with plywood in making boxes; flat, round, half-round, and quarter-round, plain or ornamental, beading, and many kinds of simple shapes in mouldings are available. Various uses for this kind of material will be illustrated, but, as far as possible, the use of mouldings and beadings should be restrained and arise only from the need for decorative work. Machine-made mouldings can be used for making picture frames a small mitre sawing block is easily made, and many uses will be found for it.

Early Work for Juniors

It is not proposed to illustrate in this article anything in the way of model furniture, but to suggest *methods of making useful pieces of work*. The use of nails, screws, and glue in making the necessary joints is generally more useful than attempts at making shaped joints with the saw and chisel. The work should lead to the more advanced form of woodwork taken

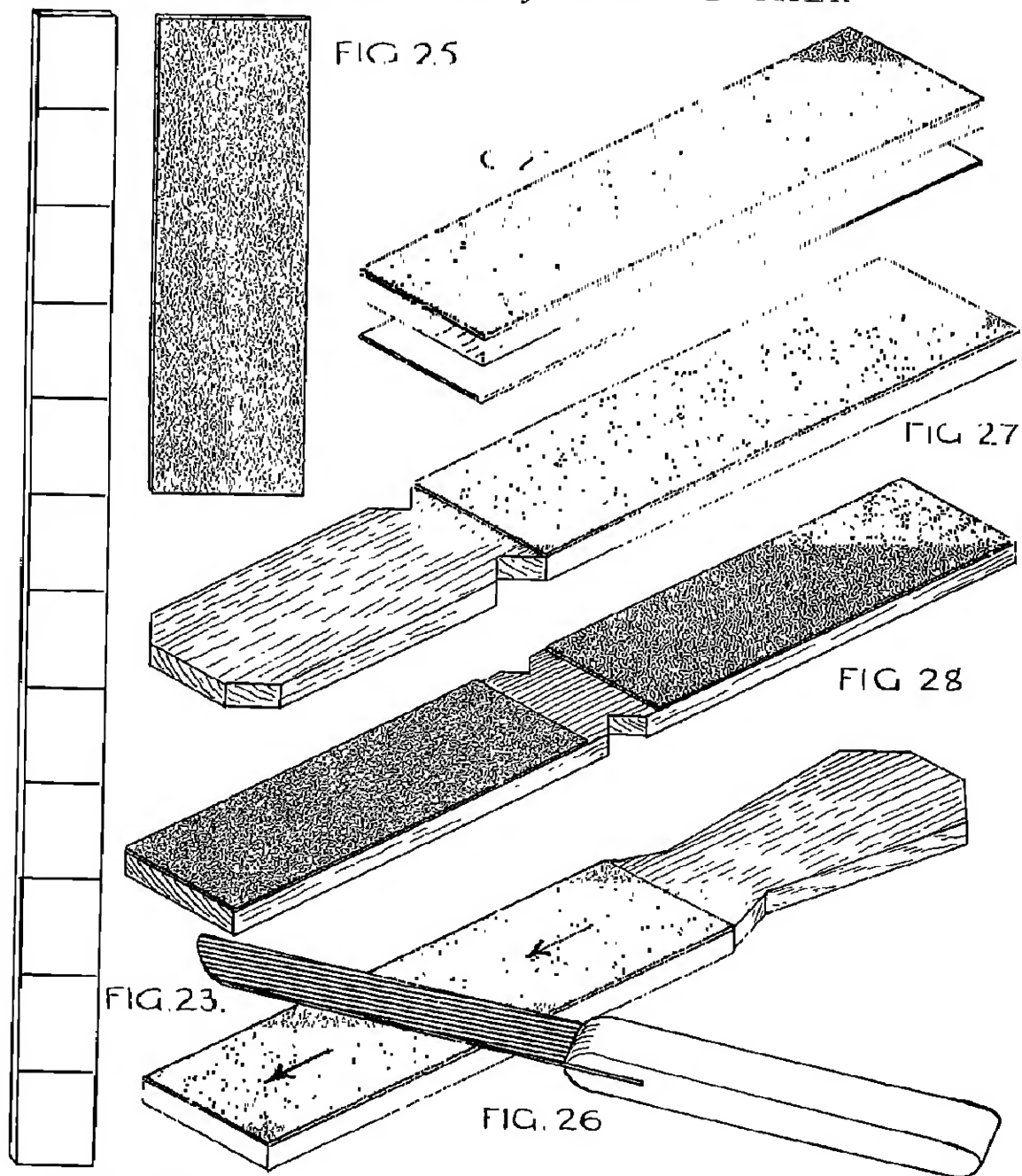
in the handicraft room, but, as in the case of rural schools, where it is often impossible for the children to attend a centre for either metalwork or woodwork, the scheme outlined in these pages will give the children a *working knowledge* of the more commonly used tools.

A beginning should be made with some strip wood, materials 1 in. wide and not more than $\frac{1}{4}$ in. thick, preferably a little thinner, and a length of 12 in. should be cut off and marked off in 1 in. spaces. The inch divisions should be sub-divided into halves and quarters, and pencil lines should be drawn across the strip to form a rule, as shown at Fig. 23. This first piece of work gives familiarity with the use of the ruler in marking out pieces of wood and brings the try-square into use as well. The ends of the strip can be smoothed by holding the wood upright and rubbing them on a sheet of fine glass-paper.

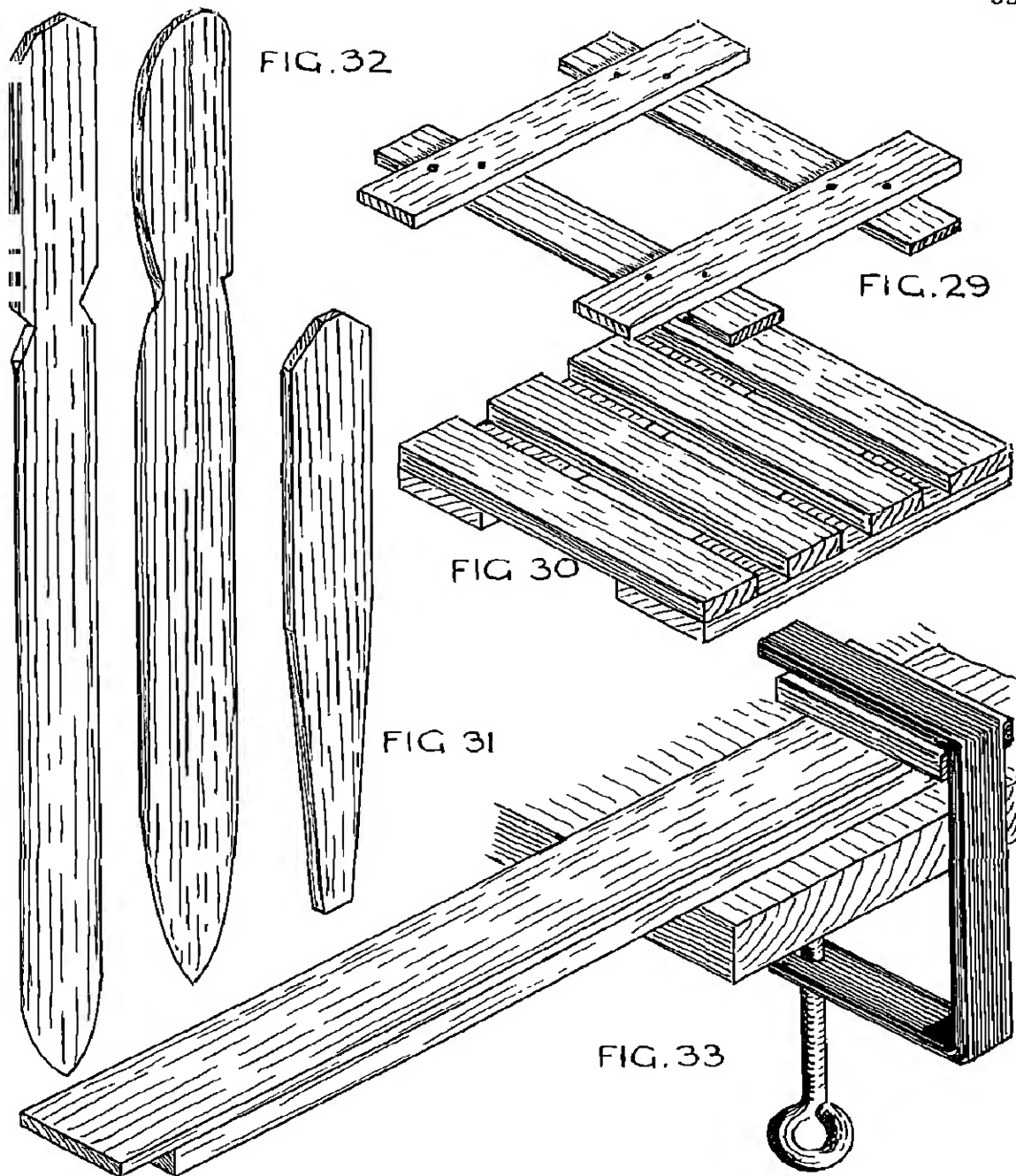
Pencil and Knife Sharpeners

The next piece of work is actually connected with glass-paper, and it can be pointed out that it is not really convenient to use the flat sheet as it is, but by sticking the paper on a piece of wood it can be put to better use. There are several ways in which glass-paper is useful when glued down to a wooden base; one is to use the material for sharpening pencils, and this leads to the making of a pencil sharpener as shown in Fig. 24. The wood used can be wider than that used for the ruler, at least $1\frac{1}{2}$ in. wide and about 4 in. long. The glass-paper (Fig. 25) should entirely cover the piece of wood, and can be secured with ordinary glue or with liquid glue from the tube.

The grades of glass-paper should be noted and another pencil sharpener made with two grades of glass-paper, one side being of fine and the other of medium. In this case the wood may be a little wider to give experience in cutting wider strips. While the attention is drawn to one form of abrasive material, another should be dealt with, and the possibilities of emery paper and cloth discussed. While it is possible to smooth a piece of wood with glass-paper, it is impossible to use the same material with effect on metal surfaces. By substituting emery for glass-paper, it is possible to make a sharpener suitable for



Wooden Ruler (23); Pencil Sharpener (24); Glass-paper (25); Sharpening a Knife (26); Sharpener Showing Handle Shape (27); Combined Knife and Pencil Sharpener (28)



*Line or String Winder (29); Pot Stand (30), Plant Label (31), Two Paper-Knives (32);
Supporting thin Wood by using a "G" Clamp (33)*

keeping a keen edge on a knife, as shown in Fig. 26.

In making a knife sharpener the advantage of having a handle to it should be considered; at least a portion of the strip of wood should be left for holding. The suggestion given in Fig. 27 indicates a suitable shape. The use of the two kinds of abrasive paper suggests the possibility of making a combined knife and pencil sharpener on the lines of the illustration, Fig. 28. The V-shaped cuts, as well as those at the top of the handle can be made with the saw, knife, or chisel. If the first one is left with saw-cut ends and the second with knife- or chisel-cut corners, the neater and more suitable smooth finish can be pointed out.

Line or String Winder

Although the above beginning with shaping can be developed, it is a good plan to continue the use of strips in making a line or string winder as shown in Fig. 29. In this piece of work it is necessary to use nails in securing the strips together and a new operation is introduced. The wood should be about $\frac{1}{4}$ in. by $\frac{3}{16}$ in., and the nails not more than $\frac{3}{8}$ in. The strips should be nailed together first of all by using one nail; it can then be pointed out that the angle will not remain a right-angle, because the one nail in each overlap acts as a hinge when the frame is held at opposite corners. The need for two nails is now understood, and it should be worked out. Incidentally the idea of trellis will be seen, and the possibility of using strips of wood to make one of those expanding toys on the lazy-tongs principle.

Pot Stands

Still using strips of wood, possibly a little thicker, further experience in nailing can be provided by making a pot stand, as shown at Fig. 30. This piece of work provides practice in measuring, cutting accurately to the lines, and spacing, as well as nailing. It is possible to make two or three pot stands in different sizes without the work becoming monotonous. It is not essential that the strips should be of the same width; two different widths can be used

so that the idea of a simple pattern can be evolved, besides adding variety to the work.

Wooden Labels

If desirable, the simple operations of cutting and nailing strips can be carried on by making plant supports for training geraniums and other pot plants, but, as there will be many other opportunities of obtaining useful practice in these operations, progress can be made to greater advantage by introducing new tools. A beginning has already been made in simple shaping, and this can be carried a stage further by making a plant or other label as shown at Fig. 31. The shape should be cut with the saw in the first place and then finished with a spokeshave. The use of this tool in leaving a smooth surface will be appreciated at once, and care will have to be taken that it is not used too vigorously.

Paper-Knives

Following the plant label with a key label calls for the use of the drill in making the hole for the string, and then the use of the spokeshave in slightly rounding the sharp corners can be discovered. It is probable that suggestions will be forthcoming for making paper-knives; if not the idea can be suggested at this stage, and this opens a considerable field for interesting work. Soft wood is hardly suitable for making a paper-knife, so sycamore or some other close-grained wood should be used. Suggestions for paper-knives are illustrated in Fig. 32, and it will be seen that the idea of the knife cut is developed to provide a simple decoration for the handle.

Whitewood paper-knives can be finished with a stain and then wax-polished, but the surface should be very carefully smoothed with fine glass-paper. An effective decorative feature may be provided by forming a simple pattern on the handle with round blobs of enamel paint or by stick prints before the stain or polish is applied. There is no lack of alternative treatment in this part of the work, either in the shape of the blades or the handle, or in the method of applying pattern and colour.

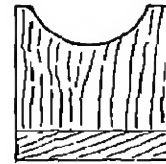
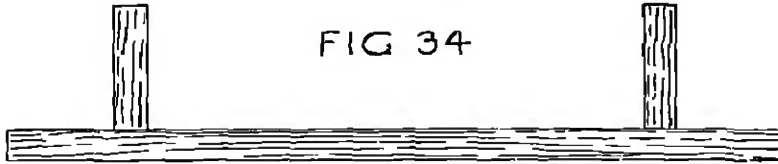
Considerable care will be needed in the use of the spokeshave when cutting away the waste

wood to form the sharpened edges of the paper-knife. Owing to the fact that thin wood is used, very little pressure should be exerted, and a good plan is to rest the length on similar material and secure the two thicknesses to the work-table with a "G" clamp as suggested in Fig. 33. The use of the spokeshave will also give experience in finding out the direction of the grain, for it will be found that in one direction the tool will take off smooth shavings but in the opposite

The use of colour can be extended by making name plates and surrounding a piece of lettering with a decorative border. Stencil-cut letters can be used, but painted letters are generally more effective. The letters can be drawn direct on the wood with lead pencil, and in the case of clock or roman letters filled in with pencil. A suitable paint to use is one of the celluloid enamels thinned down a little with the medium supplied for the purpose, but good work can be



FIG 34



Pen Rest

direction there is often a tendency for the grain to pull up and leave a rough surface.

Finger and Name Plates: Colour Decoration

The decorative treatment suggested for the handle of the paper-knife can be utilized in making finger plates for the door, using thin material not much more than $\frac{1}{8}$ in. thick. To round the edges and the ends of very thin wood in the wedge or screw vice would be difficult, but if the suggestion for the shaving of the sides of the paper-knife is carried out and a suitable piece of wood is placed under the finger plate, wood thinner than $\frac{1}{8}$ in. can be safely worked. Owing to the large surface available, the finger plate provides an opportunity for the use of the stencil. The pattern can be painted on with ordinary oil paint and wax-polished when dry, or the surface can be covered with a suitable stain. Opportunities for colour harmonies are given in the combined use of oil paints and stains by using either plain blobs of paint, prints made by sticks, or patterns formed by the stencil.

done with ordinary water-colours mixed with a little gum. A good brush is essential, a writer's brush of sable is best; the ordinary camel-hair water-colour brush is practically useless for the purpose.

More Advanced Work: Pen Rest and Boxes

A little more difficult constructional work should follow the use of the spokeshave, and the suggestion for a pen-rest shown in Fig. 34 should be worked out. The V-shaped opening can be cut with the fretsaw, it is not too early to introduce this new tool, and a good opportunity occurs of illustrating the advisability of marking out the parts and doing some of the preparatory cutting before the parts are cut off; in the present case the two ends can be shaped while the wood is of sufficient length to hold comfortably on the sawing board. The sawing will have to be very carefully done if the edges are to be truly square, this applies particularly to the uprights that are afterwards nailed on.

The material to be used should be gradually

increased in size, both as regards area and thickness, but it is important that practice should be given in planning out the material. A good plan at this stage is to make a small open box, as shown at Fig. 35: this can be used for

flange on the lid will be noted and carried out with either separate strips or with one piece.

A larger box with inner divisions may well follow, and a suggestion is given in Fig. 36 for such a box, to be fitted with an inside fitting lid.

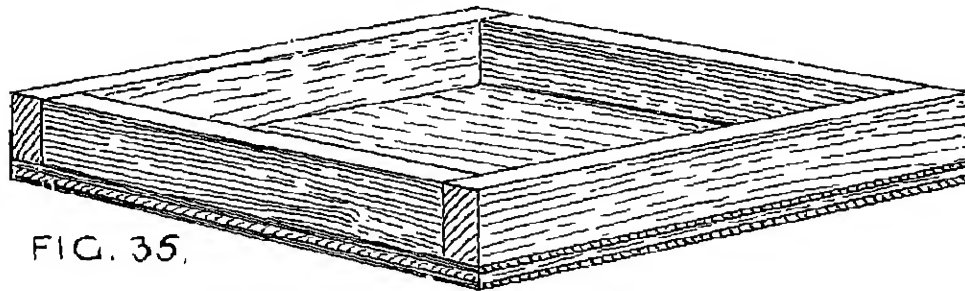


FIG. 35.

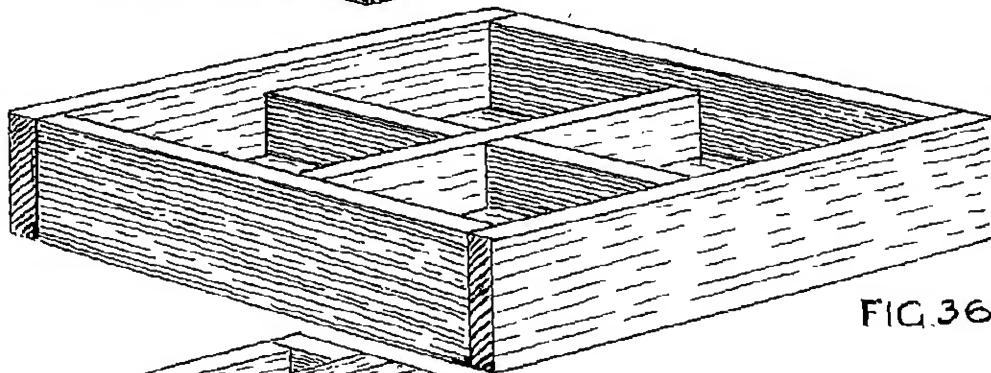


FIG. 36

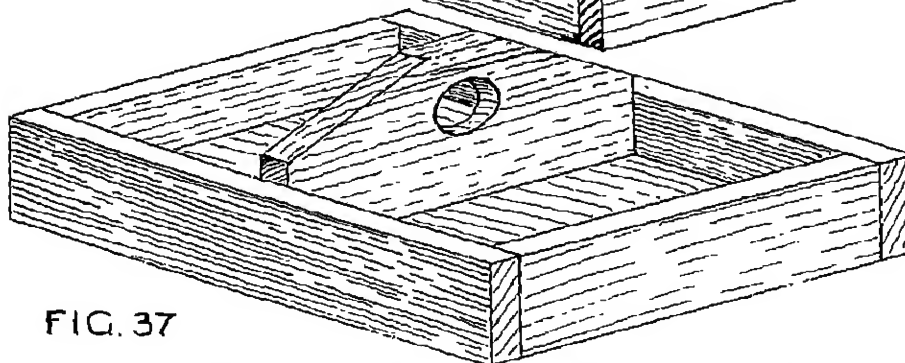


FIG. 37

Open Box (35); Box with Divisions (36); Nail Box with Handle (37)

nails or odds and ends. The box should be drawn in plan, and side view and the sizes of the various parts carefully noted. One box should be made with the bottom nailed on the sides and another with the bottom fitted inside. A third box can be made with a projecting bottom and a similar lid; the necessity of providing for a

The possibility of making use of one of the partitions to form a handle should not be overlooked; the illustration in Fig. 37 of a nail box is a good example of the sort of work that can be done with wood not less than $\frac{1}{2}$ in. thick.

An opportunity should be provided for the use of screws in making a joint; this can be found in

box-making, either in the sides or in providing a handle for the lid. One of the uses of the screw is that it can be used as a hinge, and in Fig. 38 is illustrated a method of providing a hinged lid for a box to hold stamps, etc. The base is a plain piece of wood to which is nailed a piece with the centre portion removed with the framesaw. This is a new method of employing the saw, and requires a hole in which to insert

with pins; the correct position of the screw holes as well as the most convenient length of the strips can then be found by experiment.

Use of Glue

The use of glue as a means of making strong joints can be illustrated in many ways, and, although the liquid form is certainly convenient,

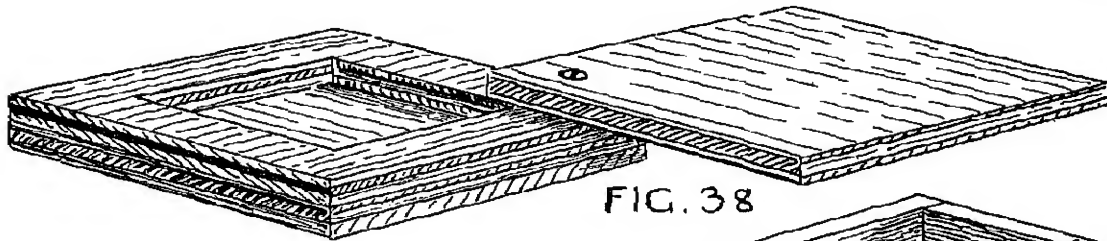


FIG. 38

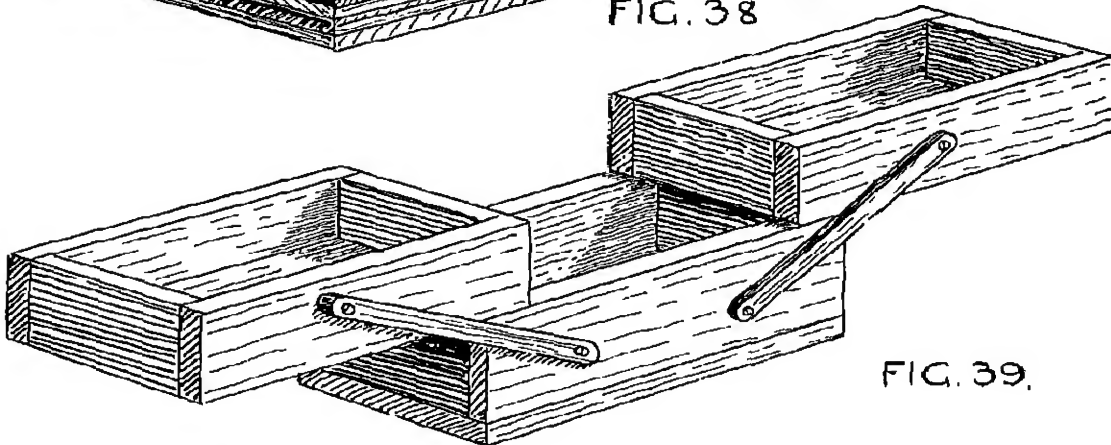


FIG. 39.

Box with Hinged Lid (38)

A Useful Nail Box (39)

the blade. Those who have done any fretwork will have no difficulty in fixing the blade in the frame. The top of the box is a little larger than the centre portion, and is secured at one corner with a screw.

Another use for the screw in forming a hinge is shown in Fig. 39, and consists of fitting three boxes together so that they open out as shown. Apart from the necessity of making all the boxes of exactly the same width, and the two top ones together the same length as the bottom one, there is no special difficulty. To prevent mistakes in cutting off the hinge strips and screwing them in wrongly, it is a good plan to cut some strips from cardboard and fit them in position

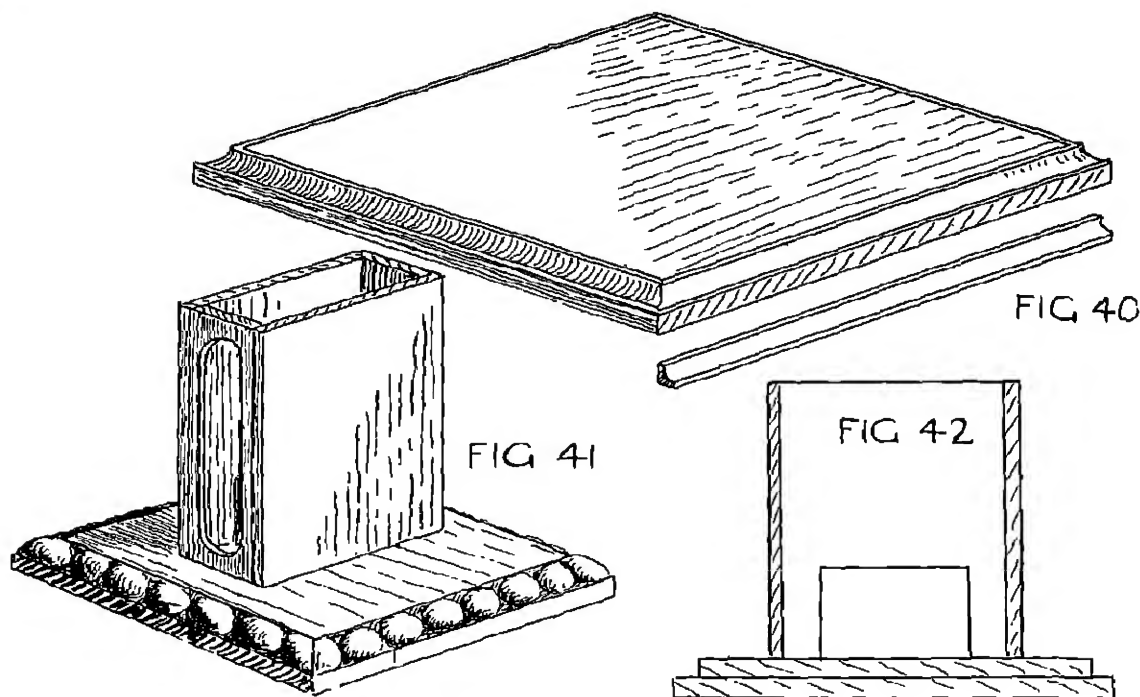
it is rather expensive when used on large surfaces. Ordinary Scotch cake glue, broken in pieces and placed in a jar filled up with water, should be allowed to stand until the glue has swollen to a jelly. The surplus water is now drained away and the jar placed in a saucepan of boiling water, that is unless a proper glue-pot forms a part of the equipment. When the water has simmered for some time a scum will appear on the top of the glue; this should be skimmed off, and the glue can be used at once and applied with a fairly stiff brush. It is essential to good work that the glue should be hot and as little as possible used. Beginners usually make the mistake of having the coating of glue much too

thick, if it will not run easily off the brush, a little hot water should be added, care being taken not to weaken it too much.

The suggestion given in Fig 40 for a tea-pot stand provides an opportunity for gluing two flat surfaces together and using some beading. The material can be plywood, the top piece being $\frac{1}{4}$ in. less all round than the bottom piece. Plain

with glue, but it will be necessary to see that the rebate is quite free from glue: it is better to do this with a wet brush before the glue gets hard. If it does get hard, the knife should be run along the edges of the wood to ensure that no lumps remain.

Further practice in gluing flat surfaces together can be obtained by making a matchbox



Tea-pot Stand (40); Match-box Stand (41 and 42)

quarter-round may be fitted in the rebate formed on the edges by the difference in the two thicknesses, but a more decorative effect is obtained by using ball beading or a hollow beading instead. The joining of the corners brings in a new problem, that of the mitre, and it will be necessary to saw the beading to length on a mitre block. a simple piece of apparatus (Fig 5) with guiding-holes for the saw made at an angle of 45 degrees. It is a good plan at first to cut the strips of beading a trifle longer than the bottom of the stand, and then to saw to the exact length at the right angle. The beading should be fixed

stand as shown at Figs. 41 and 42. The material is cut to leave a rebate of $\frac{1}{4}$ in. on each side and the space filled in with quarter ball beading.

In this case it will be necessary to exercise some care to make the corners coincide properly; it will not do if the length is cut off anywhere. The ends of the beading should fit as near as possible exactly. Other forms of turned and sawn beading can be used, and in all cases the same care must be taken in correctly spacing it out. The upper portion of the stand can be made with a solid piece so that the cover can slip over it half way, but the neater method shown

provides for an outer case made so that the box is slipped inside; a small box is glued to the bottom so that the inner case is pushed up half way. The work entailed in sawing out the slots on the side of the matchbox holder is not difficult, and it is suggested that the curves are first

Egg Stands

Having had some experience with the centre-bit, the class should have further opportunities, an example in the form of an egg stand being illustrated at Fig. 43. In this piece of work some

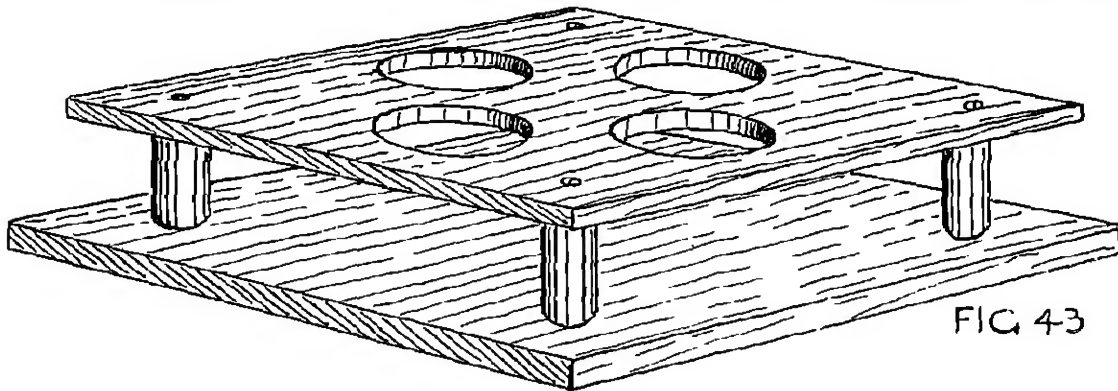


FIG. 43

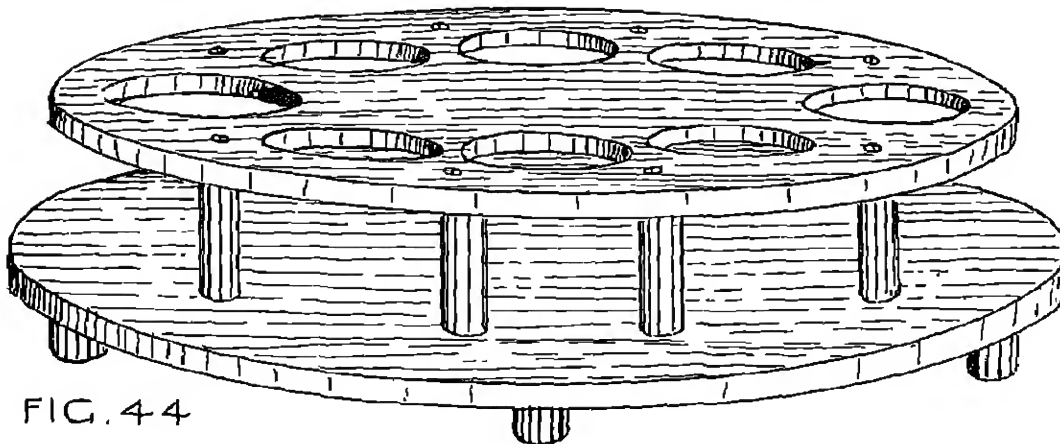


FIG. 44

Egg Stands

made with a centre-bit as indicated in the diagram. It is necessary to make a hole for the saw in any case, and it is an opportunity of using a centre-bit with some advantage. Several centre-bit holes should be bored in order to remove most of the waste; the edges can then be trued up with a chisel. It will be seen that the strip of wood for the sides is not cut apart until after the openings have been cut.

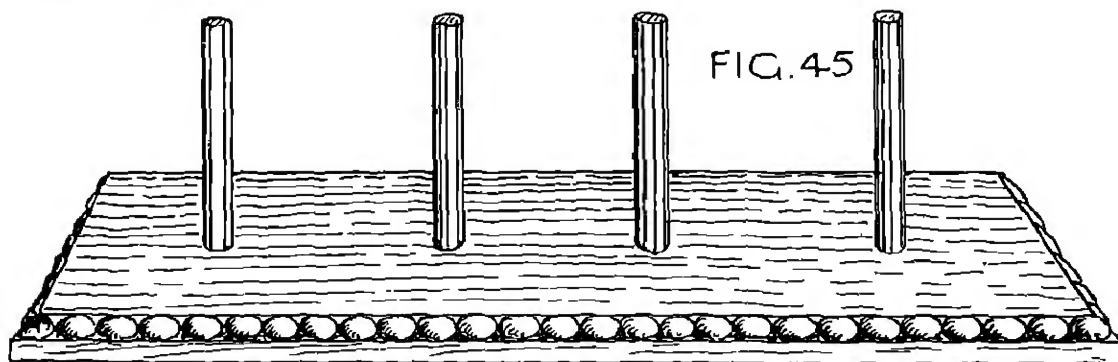
round dowelling is used for the supports, the material being obtainable in a range of diameters from $\frac{1}{8}$ in. upwards. The top piece of wood may be slightly smaller than the bottom, but should be large enough to allow of four 1 in. diameter holes (none too large for the purpose). The addition of an $\frac{1}{8}$ in. would be an advantage. The length of the uprights should be about $1\frac{1}{2}$ in., and, if they are secured from the bottom with

ordinary flat-head screws, the top might have round-headed screws

The square egg stand is usually a favourite piece of work, and may be followed with a round one, as shown at Fig. 44. With the framesaw it is a comparatively simple matter to cut out the round shape and, if required, the edges can be finished with the spokeshave. There should, however, be no need for the latter tool if the sawing is carefully done, the finish being given with a file used here and there if there should be a slight lump, otherwise a pad of glass-paper

Stand for Cotton Reels

The use of dowelling suggests the possibility of making a stand to hold cotton reels; it should be made on the lines suggested for the alternative form of egg-stand with double thickness base. The dowelling required is $\frac{1}{2}$ in. diameter, and, instead of screwing the material from the bottom, suitable holes should be drilled in the base, so that the uprights can be glued in place. Although the circular form is suggested, there is no reason why other shapes should not be made;



Stand for Cotton Reels

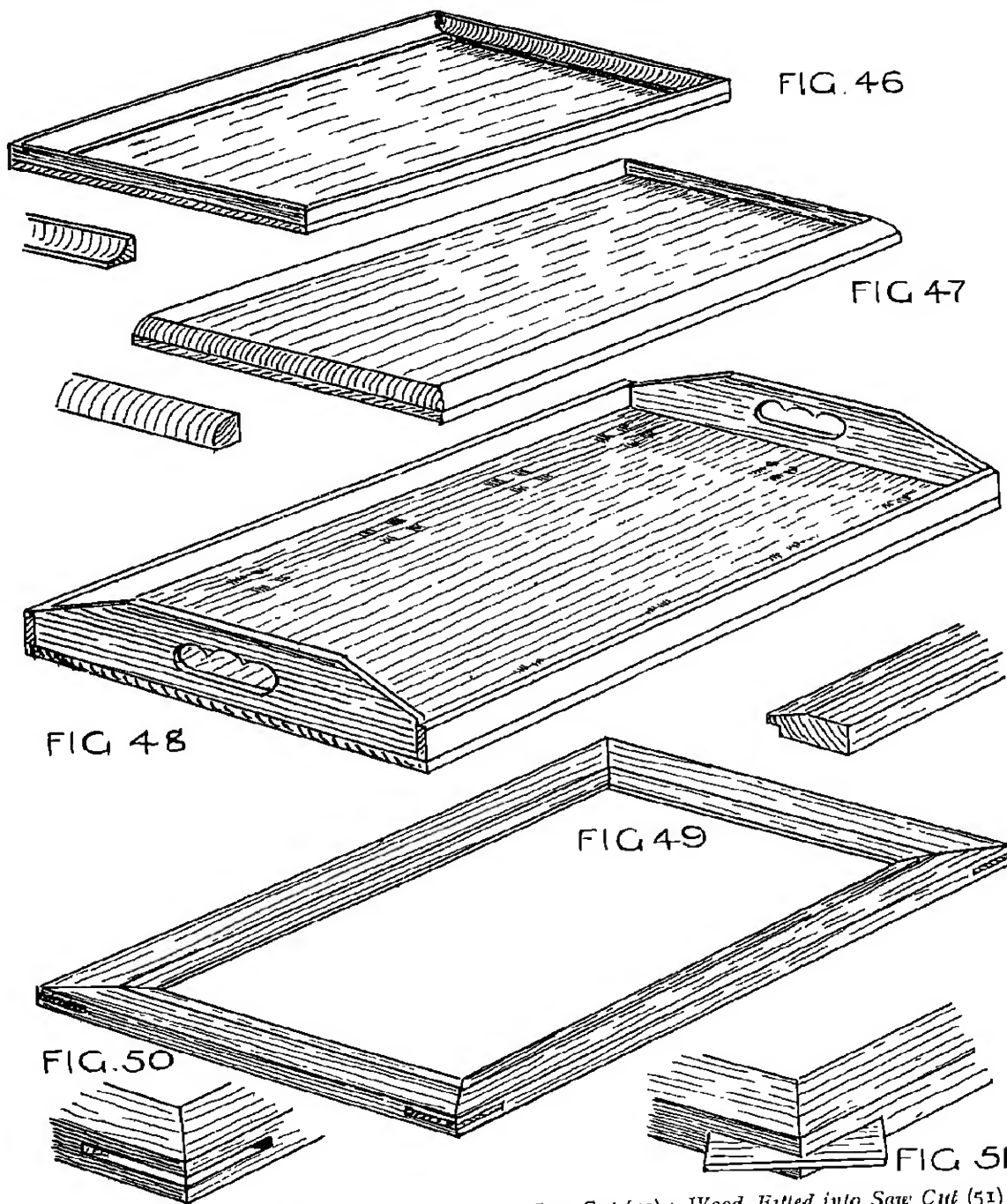
should be enough. The circular egg stand can be made to hold six eggs, and in that case the supports should be at least three, six if the wood used is at all thin, and one in the centre as well. Plywood will be found the most suitable material to use

A more decorative stand can be made by making the base with two thicknesses of wood and leaving a rebate on the outside edge for filling in with quarter-ball beading. The top piece may be pierced with holes corresponding with those on the upper portion but smaller, and the circular supports need not be more than 1 in. high. The stand is improved by the addition of a centre handle, this can be a plain piece of dowelling, but, referring back to the earlier work in knife-cut decoration, there are possibilities of using a square piece of wood having the corners cut or notched to form a pattern. Knife cuts in the form of V shaped recesses can be done on the corners as well as on the sides of the wood.

the example shown at Fig. 45 illustrates quite a simple form of construction, but, when the rebates are filled in with ornamental beading, an effective piece of work results

Further Suggestions

Trays. With the practice gained in cutting the mitred corners of the beading for the work previously outlined, it should be possible to carry mitring a stage or two further. Small trays with a simple piece of beading round the edge, as shown in Figs. 46 and 47, are easy enough to do, and apart from the increase in the size of the material it is no more difficult to make larger trays, as shown in Fig. 48. The prepared tray moulding can be bought ready for use, with some careful selection in the kind of plywood used for the base of the tray, some really presentable pieces of work can be done. It should be noted that in a large surface, such as a tray, much depends on the grain of the wood, and



Trays (46-48); Plain Picture Frame (49), Saw Cut (50); Wood Fitted into Saw Cut (51)

FIG 52

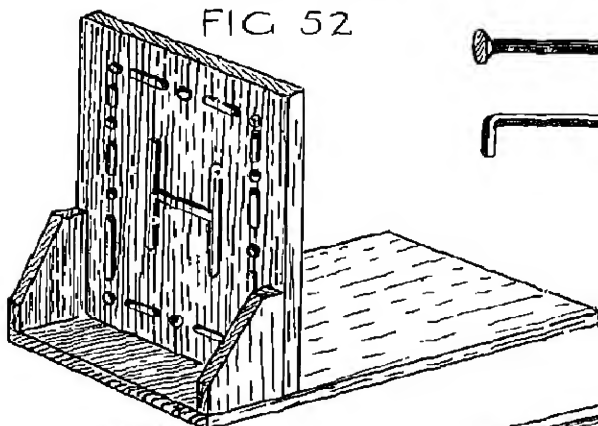


FIG 53

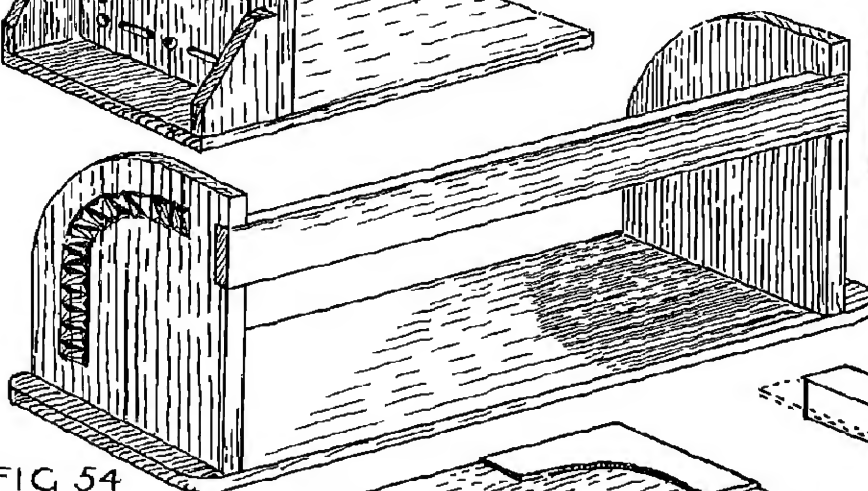


FIG 54

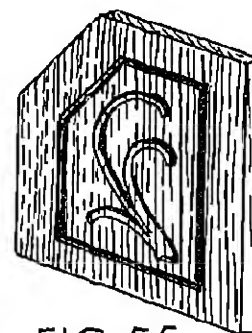


FIG 55

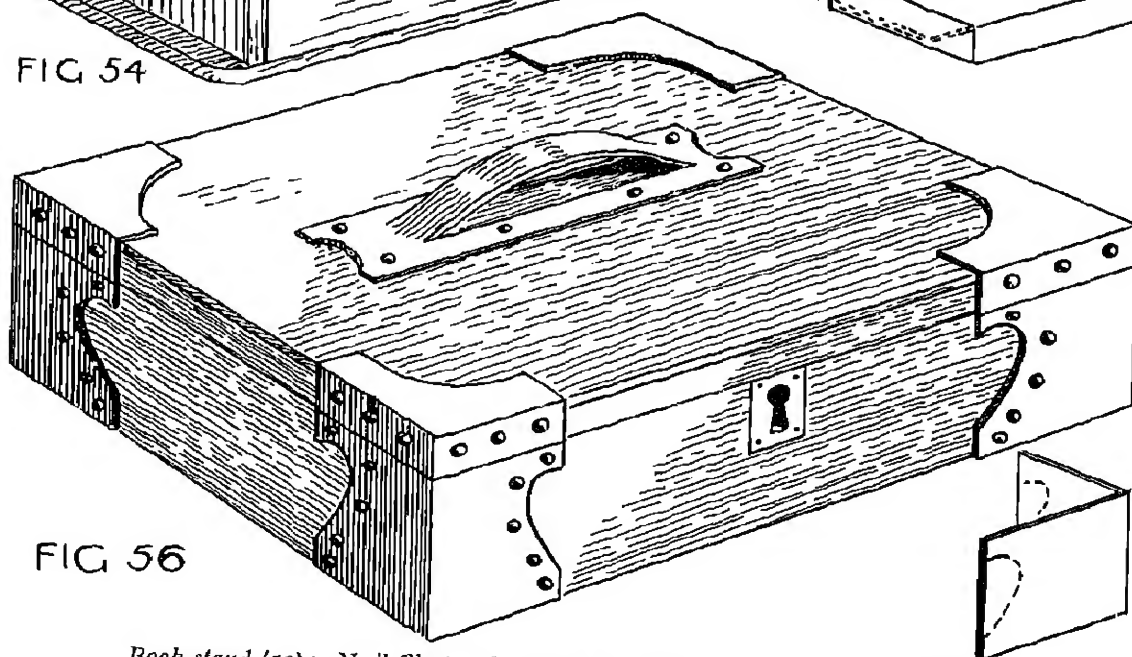


FIG 56

*Book-stand (52); Nail Shapes for Burning Patterns (53); Chip Carving (54),
Gouge Cuts (55); Box with Metal Angles and Handle (56)*

with plywood it is possible to obtain beautiful grain effects which may be enhanced by stain and polish. The stain should be as transparent as possible: the spirit stain used in leather work is admirable, some of the plain aniline dyes are suitable, as also some water stains. A good effect is obtainable, if the wood is not sufficiently decorative in itself, by applying ebony stain, but prior to the stain a pattern in colour should be arranged as a border, the paint being either ordinary enamel or cellulose. When the ebony stain is applied, the surface should be rubbed over lightly with a soft rag and the coloured border will remain, increased in its effectiveness by the black background. This treatment can be carried out in other ways, and is particularly effective for finger plates and plain stands.

Plain Picture Frames (Fig. 49). These do not involve much more advanced work than the borders of trays, very similar kind of moulding being used. The difficulty in making picture frames properly, apart from that of accurate mitres, lies in nailing up the corners, and this requires a fairly strong vice or one of the corner cramps which are specially made for the purpose. An alternative plan to nailing is to glue the corners together and to give the required extra strength insert a thin layer of wood in a saw cut. The corners should be cramped down to the work-table; the saw is held sideways and carefully run into the wood as at Fig. 50. Odd pieces of veneer wood should be used to fit into the saw cut, as shown in Fig. 51, the pieces being first covered with glue. Leave corners until the glue has dried and then saw the projections off. If veneer is not obtainable, one of the layers from an odd piece of plywood can be used quite as effectively.

Small Book Stands can be made quite easily from prepared wood, a simple design being illustrated in Fig. 52. The end pieces of the stand provide spaces for decorative work, and one particularly effective method is that of stick printing with hot iron shapes instead of wooden sticks; it is merely a development of stick printing. The material is obtained from large screws and nails as shown in Fig. 53, and with a Bunsen burner as a heater there is not much risk of burnt fingers provided that the handles are substantial. The wood should be

only slightly charred and then rubbed vigorously with a stiff brush, leaving a light brown stain on the wood; this is particularly effective, especially if a white wood, such as sycamore, is used. This form of wood decoration is a very old one, and may be used on such work as wooden trays, picture-frame moulding, and boxes.

Chip Carving. Another useful form of decoration is that of chip carving and gouge cuts. For the decoration of book-stand ends, the top of boxes, and similar flat surfaces, chip carved decoration, also an old method, can be effectively carried out. The cuts are particularly simple, as will be seen in Fig. 54. Although there is not a great variety in the cuts, a number of combinations can be worked out using no other tool than the knife. With the gouge or veiner, as the very narrow carving gouges are called, there is ample opportunity for working out definite patterns on the wood. It is hardly advisable, using comparatively thin wood, to carry gouge-cut decoration to any distance, but the beginnings are possible, and Fig. 55 indicates some of the possibilities.

Use of Metal. Fig. 56 indicates a method of using thin pewter or copper to make angles for a box. The top handle is also formed from the thin metal by hammering it slightly from the inside into a hollow made in a piece of wood. There is no point in covering the box entirely with metal, but using the material as strengthening plates for the sides of the box, and as ornamental features in the form of handles or hinges, the material is put to its proper use. The making of hinges is not difficult, but here lack of space precludes description of the constructional methods.

Conclusion

The above suggestions for a course of light woodwork can be extended to cover the work of several terms without duplicating the actual examples. The suggestions outlined grow out of one another, and as far as possible this idea should be encouraged. The use of a tool in one piece of work may suggest something to follow, or the construction carried out in one example may be improved or elaborated in the next. All the examples here illustrated are fit for the purpose for which they are intended, and if alternative projects are added they should be subjected to the same test.

CANE BASKETRY

ORGANIZATION OF THE COURSE

IT is acknowledged generally that decorative arts and crafts do not make so strong an appeal to children as does constructive craftwork. The reason is that many children feel that the ability to draw and paint is a gift and is not acquired through training. The inclination to "make" is strong in children, and, therefore, a constructive craft is greatly appreciated in school, as the work provides an excellent outlet for their creative faculties, at the same time developing constructive ability, observation, patience, and accuracy. You have only to give a boy a few tools and some material and at once he is eager to produce a gratifying result.

Craftwork in many schools has to be very limited, owing to lack of suitable accommodation, but where a Handwork Centre or Practical Room is provided a wider choice of useful crafts is possible. When rigid economy has to be seriously considered, some handicrafts, owing to the costly outlay for tools and equipment, have to make way for the less expensive crafts. Among the latter, Cane Basketry is well worth considering. The necessary tools are few, materials can be used economically, and very attractive articles can be produced to serve a useful purpose in the home. One advantage of this craft is that it is equally suitable for boys and girls, but ultimate success depends upon the simplicity of the models in the early stages of the craft. Baskets of simple shape and design serve better as models than those of fanciful shape and elaborate weaving.

History of the Craft

It is always of interest to delve into the past and trace the history and development of a craft from the earliest times to the present day, and earnest basket makers will find their time and patience well rewarded by learning something of the origin of basketry, of its rise and progress, and of the legends and romance of the craft.

Basketry has been termed the Cinderella of the crafts: like the heroine of the fairy tale, it had a humble origin, but to-day it ranks among the recognized constructive crafts. In the earliest days crudely made baskets were fashioned to form some kind of receptacle for daily use. We learn that primitive man subjected basketry to serve him in the form of platters and goblets, from which he ate and drank. His food was cooked in a basket, water was fetched in a basket; his children were carried in a basket, and he himself was buried in a basket-like coffin.

In later years the craft was practised in almost every country in the world in some form or other to fill a need. Although to some it may seem to be a stretch of imagination, our modern boats, carts, and houses really originated in the crudely made basketry specimens of early days. To-day we can find survivals in the coracles used by Welsh fishermen on the river Severn, and in the peasant wagons in some parts of Europe. We are also told that the first church ever built in England was made of wattled osiers at Glastonbury. To-day nearly every kind of tradesman finds a use for basketry, and in the home or office baskets find their place.

Preparation of Cane

Cane requires very little attention in preparing it for use. Dipping the material into water and then laying it aside under cover for half an hour is all that is necessary. Do not soak the cane for a longer time, as this tends to make the cane water-logged and discoloured. When in use the cane will become dry, and it may be damped again as often as required.

Sizes and Varieties of Cane

Natural cane or rattan is a species of creeping palm *Calamus Rotang*, which grows wild in the jungles in various parts of Malaya. The best quality is selected for the manufacture of

"Pulp" or "Centre" cane. Multiple knives in a machine cut and shape the cane according to the size and shape of the knives, and the cane then is made up into bundles weighing 1 lb. The manufactured cane is obtainable in many sizes ranging from less than 1 mm. to 25 mm. in thickness. The sizes are numbered usually from 000 to 16, the latter size being about $\frac{1}{4}$ in. thick, but for school use Juniors require only about six sizes ranging from No. 1 to No. 6. The smaller sizes are for weaving, and the larger for stakes. It is always advisable to have

plify the work when used as foundations. Birch or alder three-ply wood about $\frac{1}{8}$ in. in thickness is most suitable for small bases, but tray bases should be $\frac{3}{16}$ in. or $\frac{1}{4}$ in. thick to prevent warping.

Description of Weaves and Definition of Terms

Randing. Weaving with a single cane is called randing. The cane should be held in the same way as one holds a pen when writing. The beginning end of cane is inserted between the

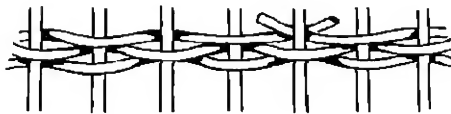


FIG. 1
Randing

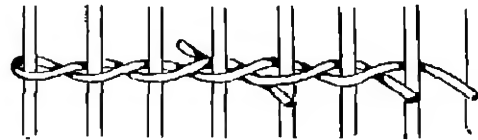


FIG. 3
Pairing

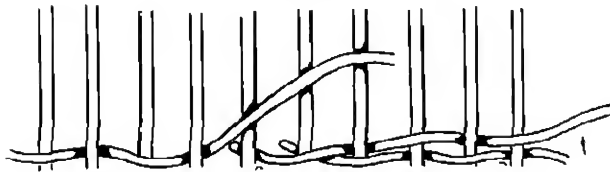


FIG. 2
How Second Randing Cane is Inserted

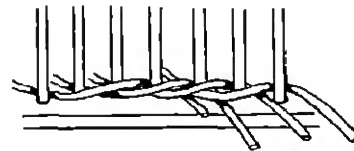


FIG. 4
Upselling

the stakes about three sizes larger than the weaving, because soft-natured stakes will not stand up against the resistance of hard weavers of the same size. Other kinds of cane, such as Palembang and Kooboo, are used for making strong baskets and handles, and serve no useful purpose in Junior Schools. Pulp wrapping cane is flat on one side and slightly bevelled on the other, and is used for wrapping handles and as a substitute for round cane in weaving the sides of baskets.

Wrapping cane may be obtained enamelled in various colours in lengths of about 2 yd., and may be used for introducing colour into basketwork and for making napkin rings.

Plywood Bases

These are of special interest where Junior basketwork is concerned, as they help to sim-

plify the work when used as foundations. Birch or alder three-ply wood about $\frac{1}{8}$ in. in thickness is most suitable for small bases, but tray bases should be $\frac{3}{16}$ in. or $\frac{1}{4}$ in. thick to prevent warping.

Pairing. Pairing is really a variation of randing, two canes being used alternately, one stroke with one and then one stroke with the other being taken, to produce a kind of spiral or twisted effect in the weave. see Fig. 3, which shows the pattern and the method of joining. Pairing should not be used in weaving the sides of baskets, but for making bases.

Upselling. This term means "setting up" and is sometimes called a triple twist. Usually the

sides of trays and baskets are commenced with upsetting; see Fig. 4, which shows the commencement and how to make a join when required. Three canes are inserted on the left of the first three stakes, then the left-hand cane is taken over the other 2 and in front of 2 stakes, then brought behind the next stake to lie parallel with the other 2 canes. The second cane (which is now on the extreme left) is worked in the same way, and then the third one is taken. Continue upsetting by taking each cane in turn; the cane should always be the one which is on the left-hand side of the other 2. The finishing ends may be either left inside the basket or drawn through to the front under 2 canes of the last row.

Waling. This is exactly like upsetting in the way of working, and is used to strengthen the sides of baskets, and is also used under borders of baskets.

Stakes. The upright ribs or canes in the sides of baskets are called stakes, and the foundation canes in a base if carried up the sides are called stakes; but, if the foundation canes in a base are cut off close to the edge of base, they are called "bottom sticks." Stakes are those which terminate in the borders.

By-stakes. These are additional stakes which are inserted by the side of any existing stakes. They are opened out and used as extra stakes to produce firmer work. If stakes are doubled and not parted in the weaving, the auxiliary stake is called a *liner*. The corner stakes of square baskets may be strengthened with liners.

Planning the Course

Basketry is a constructive craft and, therefore, requires more careful thought in the preparation and planning of the work in school than is required by a decorative craft. The questions of storage of material, quantities to be requisitioned, tools and equipment, and facilities for wetting the cane, have to be satisfactorily settled in order to produce good results with the minimum of inconvenience to both the teacher and pupils. Although the work is most interesting, it cannot be taught from a blackboard. Each pupil will need individual tuition; consequently a class of from 10 to 20 pupils is much easier to manage than a class of 30 to 60 pupils. In a large class it is sometimes possible to set

a comparatively small group to work at Basketry while the others proceed with a craft with which they are already familiar. The workers should be seated about 3 ft. apart so that the weaving canes of one pupil will not hinder the work of the adjoining one.

Practical demonstration is of greater value than theory in the art of basket making, and in view of this a great saving of time and trouble will be effected if the teacher has a solid round piece of wood 12 in. in diameter and $\frac{3}{4}$ in. thick, bored with nineteen $\frac{1}{4}$ in. holes set 2 in. apart, to take 6 mm. cane 10 or 12 in. long. With this large specimen, the teacher can clearly demonstrate in a practical way the method of weaving, and so illustrate verbal instructions given to the class. For instance, the beginnings, joins, and finishes of various weaves can be shown to advantage and the movements can be followed by the pupils. When the teacher is illustrating the method of upsetting or waling, the weaving canes should be of different colours, such as red, white, and blue, as the pattern of the weaving can then be distinctly seen and more easily copied. It is a further advantage if the position of the first stake is denoted by a coloured cane when any particular weave is commenced at this point. For convenience in storing, the stakes could be withdrawn from the base of this model.

Equipment

The usual sloping desks are not so convenient as flat-topped tables. If the latter are not available, then the work should be held on the knee, in order to get a better perspective of it, which helps so much in shaping the basket. One of the best aids in basket making is to have a slanting workboard made of two pieces of wood, one measuring 16 in. \times 8 \times $\frac{3}{4}$ in. for the top and supported by a piece 8 in. \times 4 in. \times $\frac{3}{4}$ in. at one end. Whenever possible the basket should be pinned to the board with an awl, so that the work slopes away from the pupil. Both hands are thus left free, and the basket is revolved as the work proceeds. To avoid disfiguring a wood base with the hole caused by the awl, nail a narrow piece of wood across the workboard to prevent the basket from slipping down the board. The awl need then be used only for baskets with cane bases.

The shaping of baskets is more important than the weaving, as shape cannot be altered after the basket is made. To ensure good shapes in baskets with cane woven bases, enclose the stakes in a twisted cane hoop of suitable size whilst the sides of the basket are being woven. The

It does not injure the cane to wet it as often as necessary.

Baskets cannot be made without tools, but for Juniors few tools are required as the work is limited to simple articles. It is well to remember that simplicity should be the keynote if success is aimed at in basketry for Juniors. Ambitious work should be left to Seniors. The kit of tools comprises a bodkin or awl for clearing a passage for stakes and for pinning the work to the workboard, a short-bladed knife for sharpening stakes and for cutting ends off to neaten the finish, a pair of round-nosed pliers for bruising the stakes to prevent breakages, a rapping iron for levelling the work, and a pair of shears, clippers, or side cutters for cutting the cane.

It is not necessary for each pupil to have a full kit of tools. One kit to six pupils would cause little or no inconvenience, the cost of the kit being about 5s. When making a requisition for materials to last for a period of, say, three months to provide for a class of one hour's duration a week, it is safe to reckon that each pupil will use one ounce of cane during each lesson. Quick workers will naturally use up more cane, but the progress of a class is retarded by slow or backward pupils.

The two most useful sizes in cane are No. 1 for weaving and No. 4 for stakes for small baskets. Nos. 2 and 5 are good substitutes, and Nos. 3 and 6 are useful for larger work for Juniors. Cane thicker than the last mentioned is too strong for little fingers to manipulate, but it is essential that handles should be made of cane suitable in thickness for the size of basket.

Scope of the Work

When the children have made a basket from the first model, it is advisable to allow them to make another one of the same pattern. The defects found in the first basket, such as uneven stakes, irregular spacing of stakes, or bad shaping, should be avoided in the second basket. Generally the pupils are so pleased with the results of their first effort in basketry that they are unconscious of the defects. It is only by avoiding defects that good results will be produced. The educational value of the craft does not depend upon the number of baskets made,

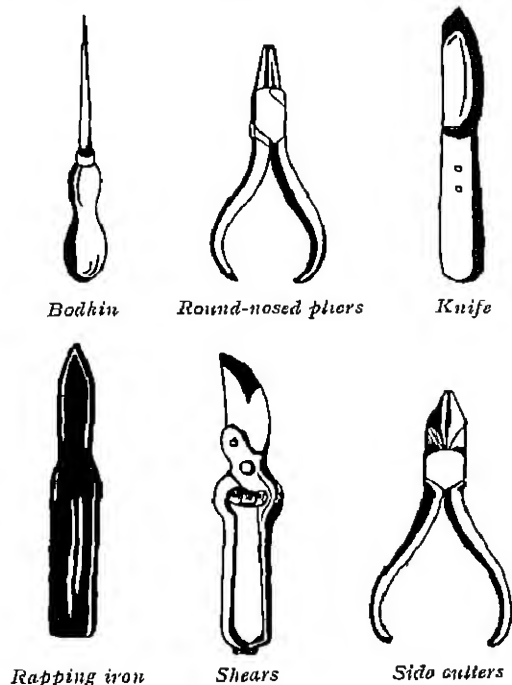


FIG. 5
Basketry Tools

hoop should be tied in position to two opposite stakes, but the sides of baskets built upon wood bases always tend to taper inward. To remedy this tendency tie the hoop inside the stakes of these baskets.

A pail or zinc bath three parts filled with water is most useful in the classroom, for re-damping the cane when the warmth of the room has dried it.

If it is not possible to store the cane flat, roll each bundle into a coil measuring not less than 12 in. across and tie it up with a strand of raffia or string. If too much cane has been damped it should be dried before being stored away in a cupboard, otherwise it will become discoloured.

but the mind of a child is benefited by the training received in reasoning out the why and the wherefore of the various weaves, the beginnings, joins, and finishings. The brain and the hand should work together, and it is better to follow a definite formula rather than just do something and wonder if it is right. All progress must be made by easy stages, and the first few models should bear a certain similarity to each other, in order that the knowledge gained in making the previous basket is utilized to good advantage in making the next piece of work. After a little experience in teaching the craft, the importance of this will be realized. It is folly to pass from one type of basket to another which is entirely different in its construction. For instance, it is unwise to make a doll's cradle from a cane woven base immediately after making simple baskets with wood bases. The easy stage is illustrated in the photograph of the doll's chair and table, which shows how the latter develops

out of the mat and the chair out of the little simple basket (Fig. 25).

Borders are often a problem difficult to solve, but the task is easier if the types of borders are introduced in the following order—

1. Open or scallop border.
2. Upright or trac border.
3. Plain three-rod border

Such borders known as plaited, roll, rope, and double and triple trac borders should not be attempted by Juniors until they are proficient in making the simpler borders.

The value of design in relation to basketry must not be ignored. Pupils should be advised and guided in the right use of colour to form pattern or relief, and it is essential that all forms of decoration be constructional and not merely applied after the basket is made. Interesting weaves, dyed cane, or beads may be introduced during construction to enhance the appearance of the finished work.

BASKETS WITH WOOD BASES

Small Oval Tray

Materials required—

- Oval base 8 in. \times 5 in., bored.
- 29 stakes No. 4 cane, 5 in. long.
- 1 length No. 1 cane.

The problem of finding the most suitable model for the first lesson in canework is often difficult to solve. It is essential that the model selected should be very simple in design. A model of the type about to be described is useful. The weaving is of the simplest kind, the shape is straightforward, and at the same time attractive and interesting. Young children should not make baskets which necessitate care in shaping, such as bowl-shaped baskets. The shaping of a basket is very important, but a child becomes so engrossed in the delight of weaving the cane that little or no thought is given to the shape of the basket. After the children have learned how to weave the cane in the making of baskets or small trays, attention should be drawn to the importance of shaping. It is not advisable to choose an article which is too small in size as the pupil will find the weaving much easier to do if the work is not cramped or finicky.

Now to make the small basket tray illustrated

in Fig. 15. If it is not convenient to make or obtain oval bases, round ones 5 or 6 in. in diameter will serve.

After dipping the cane in water and allowing it to drain for a little while, cut 29 stakes each 5 in. long from No. 4 cane. Insert a stake in

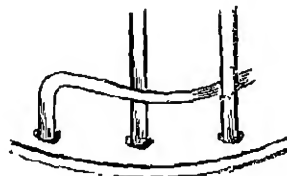


FIG. 6

Bending the Stake

each hole of the base, leaving one end projecting 2 in., with which to work the foot border. This is the simple trac border shown in Fig. 6. Place the tray on its side, with the short ends of stakes pointing away from you (see Fig. 7), then, working from left to right, bend down the first stake (which can be any stake) over the second one and leave the end behind the third stake. Repeat the movement with each stake in turn and press the work down close to the base as the

stakes are being bordered. Avoiding any weave other than the very simplest, take a single cane of No. 1 size and in the form of *randing* insert the end in the space between the first and second stakes and commence to weave in front of one stake and then behind one and so on, at the same time pressing outward each stake to prevent the sides from tapering inward. After about 8 or 10 rows are worked, convert the last row of *randing* into a weave resembling that called *pairing* by threading the weaving cane over and under the cane in the last row. When this is

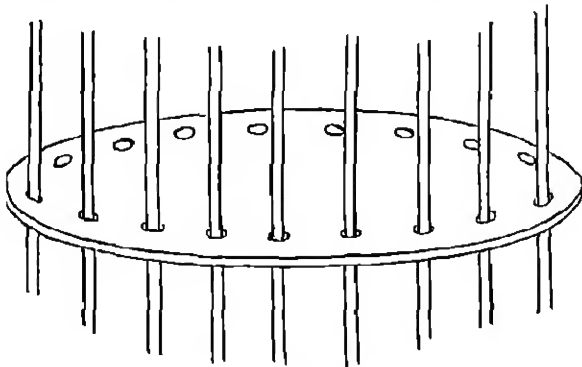


FIG. 7
Showing Base

done it should look like a two-ply cord and will keep the weaving in position.

For the *border*, first sharpen the stakes 2 in. from the line of work, then bend down the first stake in front of the second and insert the end down the near side of the third stake (see Fig. 8). Bend the second stake down and insert it down near the side of the fourth stake. Repeat the same movement with each stake in turn, then see that all loops are level. Cut off all ends inside the tray and under the base. A child's interest may be stimulated if stained or painted bases are used, but the base must be quite dry before the canework is commenced. Dyed cane may also be used with advantage.

Holder for Hot-milk Glass

Materials required—

1 thin wood base 3 in. in diameter, bored with 13 holes.

13 pieces of No. 4 cane, 7 in. long, for stakes.

2 lengths of No. 1 cane for weaving.

1 piece of coloured cane 20 in. long.

Although it is several years since the writer designed this useful and attractive little holder, the popularity it has gained as an ideal exercise in basket-making suggests that the following directions may be useful to those workers who are taking up the craft for the first time. When one is able to make this basket satisfactorily, it is but an easy step to the making of larger baskets such as work-baskets, waste-paper baskets, etc., as the method employed in the

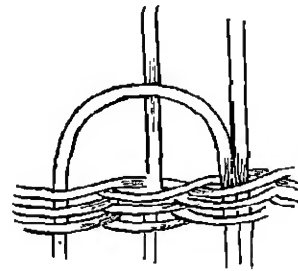


FIG. 8
Commencement of Border

latter is the same as used in the making of this little glass-holder, except that in the larger work different weaves and borders may be introduced.

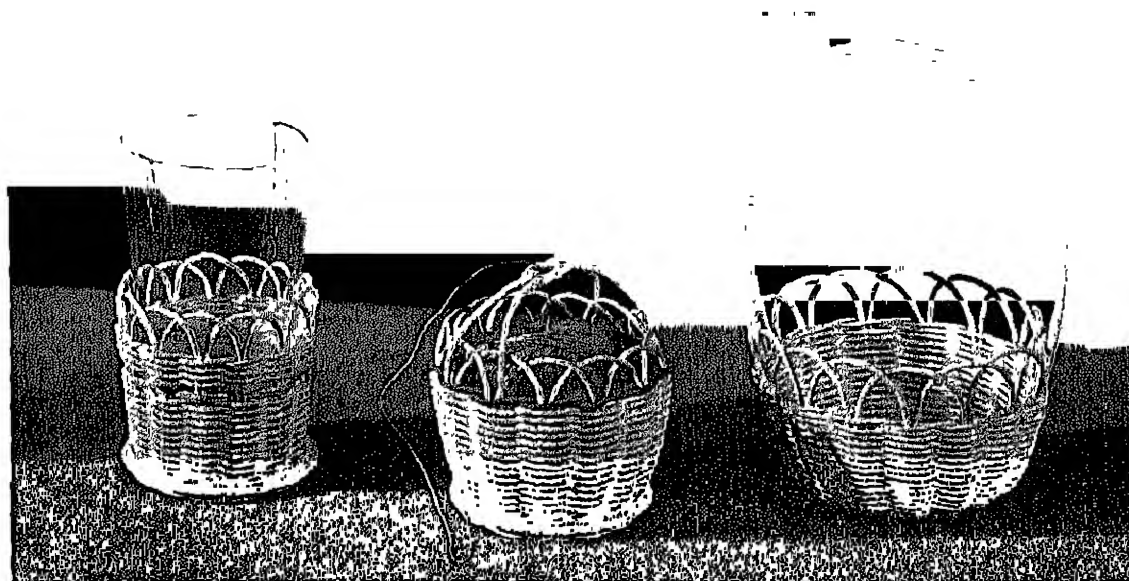
Before commencing the work the cane must be in an ideal condition for weaving, by being damped. It is not necessary to soak the cane, just a dip into warm water is sufficient to make the material pliable.

Insert the stakes through the holes in the base, leaving a projection of $1\frac{1}{4}$ in. with which to border the foot ridge.

Bend down any one stake in front of the next stake on the right and leave the end behind the third stake (see Fig. 6). Now continue with each stake in turn, repeating the movement, and then tuck the final stake under the first loop. As you make each stroke, press the work close to the base. Turn the work over and press the stakes outward, so that the work will be a little wider at the top. Keep in mind the shape of the tumbler which is intended to be used with the holder. Weave 1 row of upsetting as described for teapot stand No 3, Fig. 13, then commence to weave with a single cane in the form of

randing, taking the cane in front of one stake and behind one, and so on, until you have worked 20 rows. Cut off the weaving cane and replace it with the end of coloured cane. Continue to weave 2 rows with the coloured cane, then insert an ordinary No. 1 cane and weave

all ends under the base. For guidance in making this basket, and all other baskets built upon wood bases, it is necessary to stress the fact that the tendency will be for the sides to taper inward, unless this defect is guarded against by pressing outward all stakes as the weaving is in progress.



Holder for Hot-mouth Glass

String Basket

Bird's Nest Basket

FIG. 9

for 7 more rows. Convert the final row of *randing* into a weave resembling *pairing* by threading the weaving cane over and under the last row, passing in front of and behind alternate stakes. To finish the weaving, draw the end under one cane and cut the end off on the outside of basket. For border see Fig. 8.

The open or scallop border is very easy to work if the stakes are sharpened 3 in. above the top row of weaving and then damped with water. Carefully bend down the first stake in front of the second, and then insert the point down the near side of the third stake. Now treat each of the stakes in the same way. The loops should be about $\frac{1}{2}$ in. or $\frac{3}{4}$ in. high and nicely balanced like a half-circle. Cut off any surplus cane projecting at the joins in the *randing* on the inside of basket and neatly trim off

The weaving cane must not be pulled tightly, but should be allowed to flow along quite easily.

String Basket

Materials required—

A round base of 3 in. diameter, bored with 13 holes.

13 pieces of No. 4 cane 7 m. long, for stakes.

2 lengths of No. 1 cane for weaving.

2 pieces of No. 4 cane 6 in. long

Insert the stakes and make the foot ridge exactly as in making the glass-holder, but, before commencing to weave the sides, carefully curve the stakes by bending them to form the shape of a barrel; otherwise the sides will be too upright, and the basket will not be wide enough to hold the ball of twine. Weave 1 row of upsetting with 3 canes and draw the

finishing ends through from the inside to lie alongside the beginning ends. Twenty-nine rows of randing are now to be worked with a single cane, and all the time the weaving is in progress the shaping of the basket must not be neglected. Finish off the weaving with 1 row of "pairing" with 2 canes (see Fig. 3) If dyed



FIG. 10
Reef Knot

cane were used for the final row, the colour would add interest to the appearance of the finished work.

Make the scalloped border in the same way as described in the glass-holder. Now dip the 2 handle canes in water and bend each in the centre like a hair-pin. Hold one in each hand and then push the left-hand loop through the right-hand loop, finally tucking the ends of the right-hand canes through the left-hand loop to form a loosely tied reef knot (see Fig. 10). Sharpen the 4 ends and insert 2 of them down the side of 2 stakes on one side of the basket; the other 2 ends should now be inserted alongside



FIG. 11
Showing Position of Beads

2 stakes on the other side of basket. See that the hole in the centre of knot is directly over the centre of basket. Trim off all ends neatly. Lift out the 2 handle canes on one side, place the ball of twine in the basket, pass the end of twine up through the hole in handle and then re-insert the 2 ends of cane in their original position. To vary the pattern a little in making this basket, a small bead may be threaded on each stake after 29 rows of randing have been worked, then 11 rows woven on top of beads, finishing off with a simple trac border, taking each stake behind one stake and in front of one.

A different kind of handle is equally as effective and suitable if made as follows. Two beads

$\frac{3}{4}$ in. diameter will be required, and 2 pieces of No. 2 or 3 cane, 6 in. long. Dip the canes in water and pass them both together through one of the beads. Arrange to have the bead near the centre of the canes, then part the canes with a pencil close to the bead, now thread the canes through the second bead and push the bead right up to the pencil. Withdraw the pencil, thus making a hole through which the end of string

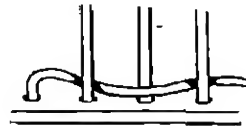


FIG. 12
Trac

will pass when the ball and handle are in position (see Fig. 11).

Teapot Stand No. 1

Materials required—

A thin wood base of 5 in. diameter, bored with 21 holes

21 pieces of No. 3 or 4 cane, 6 in. long, for stakes.

1 length of No. 1 cane for weaving.

After the cane has been damped, insert a stake in each hole and let the end project $1\frac{1}{2}$ in. on the underside of base. Rest the base edgewise on the desk or table, the short ends of cane projecting away from you. It should be borne in mind that all basketwork is woven in the direction from left to right and not from right to left.

Take hold of the first stake, bend it down in front of the second stake, and leave the end inside behind the third stake (see Fig. 6) Bend the second stake in front of the third and leave the end behind the fourth stake. Continue working in this way, taking each stake in turn, and tuck the final stake under the loop formed by the first stake, to complete the foot border.

Turn the work right side up, and, to prevent the sides tapering inward, press outward all stakes, before commencing to weave. This weave is called *randing*, and is worked with a single cane. Place the end in the space between

the first and second stake, now take hold of the cane as you would hold a pen or pencil, about 3 in. from the work. Weave the cane in front of one stake and behind one, and continue in this way until 5 rows have been worked (see Fig. 1, which shows how to make a join if necessary). Randing is the simplest form of weaving, and is mostly used in all types of baskets. It is usual to add one or two rows of *waling* before commencing the border, but in

down, otherwise the border will be too open and not so attractive in appearance.

All ends should now be neatly trimmed off with a sharp knife or clippers, and the finished article carefully singed with a spirit lamp or Bunsen flame.

Teapot Stand No. 2

The materials required are as those mentioned for making teapot stand No. 1. Insert the



No. 1

No. 2

No. 3

FIG. 13

Teapot Stands

this instance it is omitted and will be described later in the more advanced work.

The top border is called a *trac* border, and is commenced by bending down the first stake behind the second and taking it then in front of the third, finally leaving the end behind the fourth stake (see Fig. 12). Repeat the movement with the second stake, and then continue taking all stakes each in their turn. If the stakes are bruised or squeezed with round-nosed pliers, they will be less liable to crack or break. To finish the border, draw the final stake through the first loop and then tuck the cane in the only vacant space, under the border, between the second and third stakes.

In making all closed borders it should be noted that the work should be well pressed

stakes and let them project $2\frac{1}{2}$ in. on the under-side of base for working the foot border. Working from left to right with the short ends pointing in a direction away from you, bend the first stake down behind the second and then take it in front of the third, finally leaving it behind the fourth stake. Continue to weave this "trac" border in exactly the same way as described for top border of teapot stand No. 1.

Press outward all stakes before commencing to weave the sides with No. 1 cane. Double a length of cane and place the loop over the first stake, with the canes projecting toward the right hand. Three rows of "pairing" are now to be worked. This is done by taking the left-hand cane over the other, passing in front of one stake and behind the stake on the right, and

leaving the cane parallel with the other weaving cane. Take a similar stroke with the second cane, which is now the left-hand one, then continue taking each cane in turn. see Fig. 3, which shows how a join is effected. Short pieces of cane may be used for weaving and joins made as often as necessary. To finish the pairing, draw the end through from the inside under 1 cane in the last row, and cut off the ends on the outside.

The top border is another form of "trac" bordering. Before commencing to work the border, damp the stakes and squeeze them with round-nosed pliers, resting pliers on weaving.

Bend down the first stake behind the second, pass it in front of the third and fourth, and leave the end at the back of the fifth stake. Now repeat the movement with each stake in turn. The final stake must be drawn through the first loop from the inside and then tucked under the border after passing in front of two stakes, in such a manner that the pattern of the border is unbroken.

Teapot Stand No. 3

Materials required—

1 ply-wood base, of 5 in. diameter.

21 pieces of No. 3 or 4 cane, 8 in. long, for stakes.

3 pieces of No. 1 cane for weaving.

After damping the cane, insert the stakes through the holes in the base and leave 3 in. of cane projecting on the underside of base, for working the foot border. The latter is woven in the same way as the top border of teapot stand No. 2. See that the final stakes are drawn through and tucked under the border in their proper positions to make the pattern of the border continuous and unbroken.

Turn the work right side uppermost, then press all the stakes outward a little to prevent the sides from caving inward. To commence upsetting, take 3 No. 1 canes and insert one between the first and second stakes. The second cane should be inserted in the next space between the second and third stakes, and the third cane between the third and fourth stakes. The canes should all be projecting outward to the right-hand side of the work. Take hold of the first cane, which is on the left, pass over the

other 2 canes and in front of 2 stakes, then bring it out behind 1 stake and leave it projecting parallel with the other 2 canes, but in 1 space to the right of the last one. Repeat movement with the second cane, which is now on the left, and then with the third cane, and continue weaving, taking each cane in turn. The cane which is being worked should always be the left-hand cane (see Fig. 4). This weave is called upsetting, and means setting up. After 2 rows of upsetting, leave the ends inside and cut off the surplus cane. The work is now ready for the border. The one about to be described is a simplified form of a three rod plain border, and is very suitable for various types of small baskets and trays.



FIG. 14

The stakes should be damped, then squeezed with round-nosed pliers to prevent breakages. Bend down the first stake behind the second and leave it projecting outward to the right; bend the second behind the third, the third behind the fourth, and so on until the final stake is drawn through the loop formed by the first stake. Now take any one of the projecting canes and pass over 2 canes and tuck the end through the loop, leaving the end inside (see Fig. 14). Repeat the movement with each cane and cut off all ends neatly. It is important that the end of each border cane is safely resting at the back of a stake. Do not cut off the ends too short or too long, as this would spoil the appearance of the finished work.

Crustless-cheese Basket

Materials required—

1 round wood base, of 5½ in. diameter, bored with 25 holes.

25 pieces of No. 3 cane, 7 in. long, for stakes.

1 piece of No. 12 cane, 14 in. long, for handle.

A few lengths of No. 1 cane for weaving

1 piece of No. 1 cane for binding the handle.

This dainty basket is a pleasing adjunct to the setting of a dinner or supper table. It is not difficult to make, as only the simplest forms of

weaving are employed. Very few instructions are needed, because the directions given in the making of any of the three teapot stands may be followed to produce successful results.

weave the end away for 2 strokes on top of the randing. Now twine the other half of the cane round the handle midway between the first wraps (see Fig. 16), then weave the end away

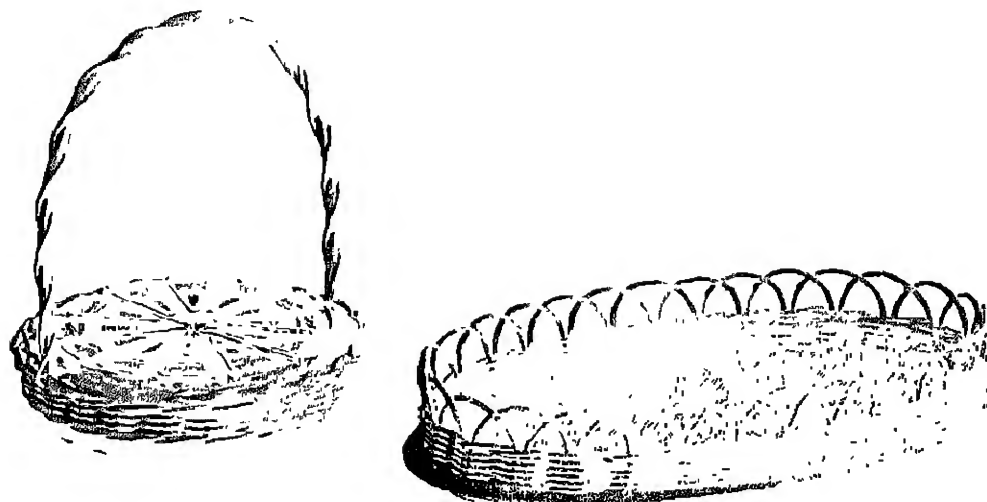


FIG. 15

Crustless-cheese Basket and Small Tray

Briefly described, the basket illustrated has a foot-ridge and top border like Teapot Stand No 2. After the foot is worked, weave 1 row of upsetting, 6 rows of randing, then 1 row of waling, which weave is exactly the same as upsetting.

To make the handle, sharpen both ends of handle cane, and insert them down the side of a stake on opposite sides of the basket. Carefully shape the curve of handle and see that it is nicely balanced. The handle must now be secured. Take a piece of No. 1 cane about 4 ft. long, double it in the middle, and pass one half through the side of basket under the top wale on the left side of handle cane. Twine one cane round the handle, the wraps being about $1\frac{1}{2}$ in. apart, then tuck the cane through the outside of basket to the inside, under the wale, and

as before, but in the opposite direction. Trim off all ends neatly.

Flower Pot Cover or Small Waste-paper Basket

Materials required—

1 round wood base, 4 in. in diameter, bored with 19 holes.

19 pieces of No. 4 cane, 12 in. long, for stakes.

A few lengths of No. 1 or 2 cane for weaving.

19 coloured wood beads.

This attractive model gives the pupil an opportunity of becoming proficient in shaping a basket on account of its depth, and the weaving provides good practice work in randing. When the weaving is in progress the movements should be in rhythm, and this result is only achieved with practice. Stake up the base in the usual

way and allow 2 in. of cane to project for working the foot-ridge. To commence the latter, bend down the first stake in front of the second and third stakes, and leave the end behind the fourth stake (see Fig. 17). Now treat the second stake in a similar way, then continue working each stake in its turn. The last stake but one

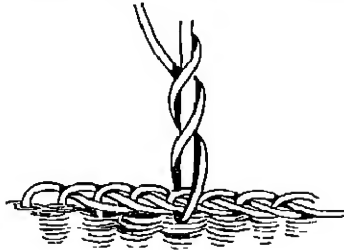


FIG. 16
Covering the Handle

should be tucked under the first loop and the final stake must be tucked under the second loop with the end resting on the base. Turn the basket over, and as usual press all the stakes outward. Weave 2 rows of upsetting with 3 No. 1 canes. Cut off 2 of the weaving canes and commence to rand with the remaining cane. Each row should touch the previous row in order that no gaps appear between the rows.

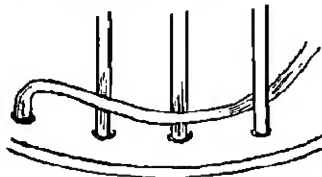


FIG. 17
Commencing the Foot-ridge

To use long lengths of cane is a great mistake. Short lengths are easier to manipulate and do not pick up the dust from the floor. A good average length for convenience is about 6 ft. All joins in the randing should be made inside the basket.

When 3 in. of randing have been worked, a different kind of weave may be introduced either in plain or coloured cane, or coloured beads may be threaded on the stakes as shown in the illustration of this basket. A round or oval bead may be threaded on each stake, or

groups of 3 on each stake. It is advisable to weave 1 row of pairing before introducing the beads, then work 1 row of pairing along the top after the beads are in position. Add a third cane and commence to weave 2 rows of waling. Should it be necessary to make a join when waling, leave the old end outside and insert the

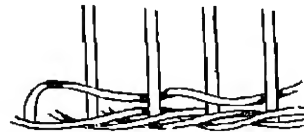


FIG. 18
Commencement of Border

new end on the right-hand side of the old one, and then continue with the new cane (see Fig. 4). A tightly woven border is suitable for this basket and a simple type of trac has been adopted for this model (see Fig. 18).

Kink all stakes $\frac{1}{4}$ in. above the line of work, then take the first stake in front of the second, pass behind the third, then in front of the fourth, and leave the end behind the fifth stake. See that the end rests on the waling. Repeat the operation with the next stake and each stake in turn. Thread the final canes in and out in their respective places so that the pattern of the border is continuous and unbroken. Trim off the ends inside the basket and those under the base. The ends will slip through unless the portion left is resting safely at the back of a stake. Singe the basket with a spirit lamp or Bunsen flame.

Table Flower Basket

Materials required—

Round wood base, of 6 in. diameter, bored with 26 holes.

26 pieces of No. 4 cane, 11 in. long, for stakes.

Few lengths of No. 2 cane for weaving.

2 lengths of dyed No. 2 cane.

2 pieces of No. 12 cane, 27 in. long.

1 length of No. 4 cane, for securing handle.

Very often a difficulty presents itself when the stakes in a basket are even in number, as this prevents the worker's using a single weaving cane successfully. In the effort to overcome the difficulty the novice will resort to *pairing*, i.e.

weaving with 2 canes, using each one alternately. The result is not so pleasing in appearance as that obtained by banding with 2 single canes in

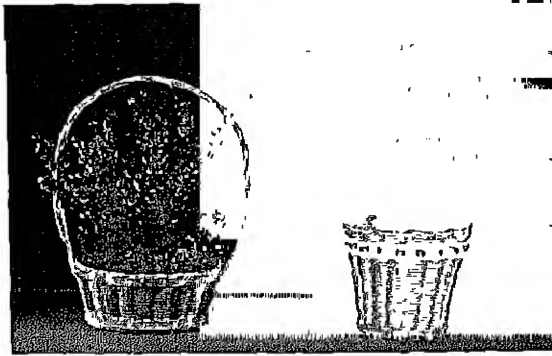


FIG. 19

Table Flower Basket and Flower Pot Cover

the following manner. When the base has been staked up and the foot border worked as described in making teapot stand No. 3, 3 rows of upsetting should be woven, then insert the end of a weaving cane between the first and second stakes. Now weave 1 row, then insert a second weaving cane between the last stake and the first one as shown in Fig. 2, and weave the second row with this cane. Never let one cane pass the other one. When the leading cane is reached cease working with the following cane, and continue with the former. This is the rule to follow in all baskets with an even number of stakes. Young children will find it easier if the second weaving cane is a coloured one, as shown in the illustration of this model.

Thirteen rows should be worked with each cane, making 26 rows in all. Add 3 rows of waling, then make the border as the one on teapot stand No. 3. Sharpen the ends of the two handle canes, then insert the end of one cane down by the side of the first stake. The end of the other cane should then be inserted down by the side of the third stake. Bend one cane over the basket and insert it down alongside of the corresponding stake on that side of the basket. Twine the second handle cane five times round the first one and insert the end by the side of a stake to balance. The handle must

be placed centrally across the basket, and one stake should be between the handle canes where they enter the border. To secure the handle, double a piece of No. 4 cane in the centre, pass half of the cane through the side of basket under the top row of waling, then make a twisted cord in the same direction as the twist of the handle. When the cord has reached the handle, pass 1 cane through the triangular space, then twine this cane round the handle, at the same time keeping it in the groove between the handle canes. Follow the other groove with the second cane as far as the junction, and then make a twisted cord to match the first cord. To finish off the canes, pass one through the basket from the inside and the other cane through from the outside, so that the 2 canes are astride the border. Weave one end away to the right under the waling and the other end away to the left, then trim off all ends neatly.

An Oval Tea Tray

Materials required—

Plywood base 16 in. by 10 in., bored with 61 holes.

61 pieces of No. 5 cane, 10 in. long, for stakes.

A few lengths of No. 2 cane for weaving

Very often the ambition of novices is to be able to make a cane tray, and in view of this a very simple model has been chosen in order that this ambition may be realized. Bead decoration,

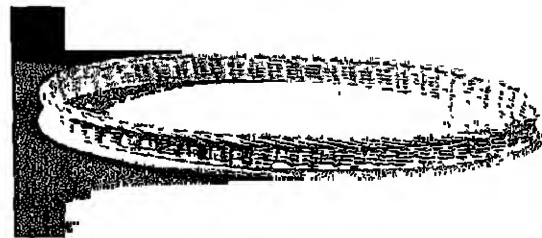


FIG. 20

Oval Tea Tray

handles, and difficult borders have been avoided, and yet this plain, straightforward piece of cane-work, if well made, can be very attractive in appearance and very useful for its purpose. Being larger and more rigid, it may prove to be

easier to make than the crustless-cheese basket, and should present little difficulty to pupils of 8 or 9 years of age. Two important things to be borne in mind when making this tray are the sides of tray must not be allowed to cave

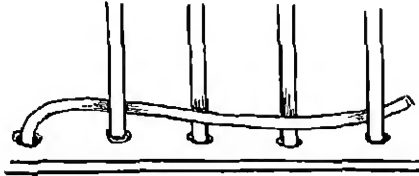
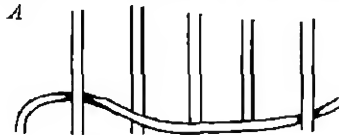


FIG. 21

Trac Foot Border

inward, and the canes in the border must be pressed down closely as they are being worked.

When the cane has been damped, place a pile of books or a box 3 in. deep on the desk or table, then lay the base on top with the right side uppermost on the box or books. Now insert a stake in each hole of the base and let the end of stake rest on the table. The stakes will not slip about if inserted with the base in the position described. Turn the base on its edge, with the short ends of stakes pointing away from you, and commence to border the foot-ridge in the



and worked in the same way as upsetting. Level the line of work if necessary before the border is commenced. Now squeeze all stakes with round-nosed pliers, resting the tool on the weaving.

Bend down the first stake behind the second, then bring it in front of the next 3 stakes and leave the end behind the sixth stake. Repeat the movement with the second stake, then with each stake in turn. When finishing be careful to thread the final canes into their respective places to form a continuous pattern (see Fig. 22).

If from any cause the stakes are not quite long enough to be taken behind 1 stake and then in front of 3, only take them behind 1 and then in front of 2, to produce a satisfactory border, exactly like the foot-ridge. Cut off all ends neatly, and see that all remaining ends are securely resting behind the stakes.

Work Basket

Materials required—

Round base, of 8 in. diameter, bored with 33 holes.

33 pieces of No. 6 cane, for stakes, 14 in. long.

9 lengths of No. 3 cane for weaving.

33 coloured beads.

This model should prove very popular in basketry classes for girls. Apart from the

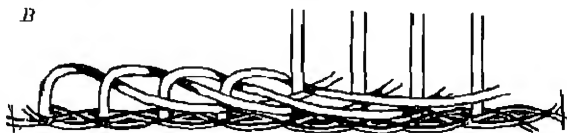


FIG. 22

Trac Border

form of a trac, as shown in Fig. 21. Each stake is bent down behind 1 and then in front of 2 stakes, the end being left at the back of the next stake. At the finish of the border see that the ends of the final stakes are resting on the base in the same way as the others.

Examine the work and make it level if necessary by tapping the border closer to the base. Turn the work right side up and then press all stakes outward, otherwise the tray will be too small at the top. With 3 canes weave 1 row of upsetting, then 8 rows of randing with a single cane. One row of waling should now be added

pleasure and satisfaction derived from the making of it, added zest will be given to the sewing or needlework lesson in lining the basket with silk or other suitable material.

The method of making it is practically the same as described in the making of the oval tray. The stakes should project $3\frac{1}{2}$ in. beyond the underside of base (see Fig. 21 for pattern of foot border). Each stake is taken behind 1 stake and then in front of 2, the end being left behind the fifth stake, counting from the stake being worked. Press all stakes outward before commencing to weave the 2 rows of upsetting

so that the diameter of top will be 11 in. when bordered, the inside depth being 4 in. Twenty-eight rows of randing are required, then

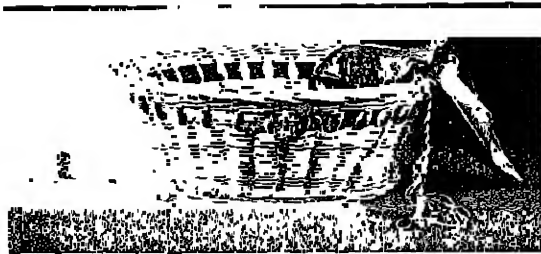


FIG. 23
Work Basket

1 row of pairing. Now thread each stake through an oval bead. A row of pairing on top of the beads should be commenced as shown in Fig. 3. When the row is completed add a new cane in the space

to the right of the last pairing cane, then continue to weave 3 rows of waling. See that the line of work is level, then commence the working of the border. Although this border is exactly like that on the top of tray, an easy way to make it is as follows. Bend the first stake down behind the second, the second behind the third, the third behind the fourth, and so on all round, at the same time leaving the canes projecting outward toward the right. Draw the final stake under the loop formed by the first stake, then take any one of the canes and tuck it under the border after passing under 3 canes (see Fig. 22). Repeat the same movement with the next projecting cane and continue in this way until all canes are tucked under the border. By adopting this method the border will be firmer and more tightly woven, and it will not show a tendency to rise, as is the case when each stake is bent down behind, on, and then in front of, 3. All ends must be neatly trimmed off and the basket is then completed.

CANework ON WOVEN BASES

Round Mat

Materials required—

8 pieces of No. 5 cane, 12 in. long, for stakes
2 lengths of No. 1 or No. 2 cane for weaving.

Although this kind of mat does not afford the best protection from heat on a polished table, it serves its purpose admirably as a model for a first lesson in cane weaving. All round woven bases and lids can be made on the same principle as this mat, except that the latter is made quite flat and the former should always be slightly arched in shape. The arching of a base ensures that the basket stands rigidly on the outer edge of base, and an arched lid improves the appearance of a basket and will not sag as a flat one does.

Always arrange for the cane to be dipped in water and then laid aside for a little while before being used, as this mellowing process makes hard cane more pliable.

To commence, make an incision in each of 4 No. 5 canes, then thread 4 canes through the slots to form a cross (see Fig. 24). Now select a soft-natured cane of No. 1 or No. 2 size, double

it in the centre, and place the loop over one group of 4 canes. Take the left-hand cane over the other one and in front of 4 canes, then take it behind the next group of 4 canes, and leave the weaving cane hanging *toward* you. Repeat the movement with the second cane (which is now on the left), then take each cane in turn for 2 rows, pulling the cane tightly when making each stroke. Part the groups of fours into twos and continue pairing for 4 rows, take each cane in front of a pair of canes and behind a pair; at the same time regulate the distance between each pair. The double stakes should now be opened out into single ones. Spaces between each row should be avoided by giving the cane a little pull before taking the stroke. Spaces are caused by the slackness of cane.

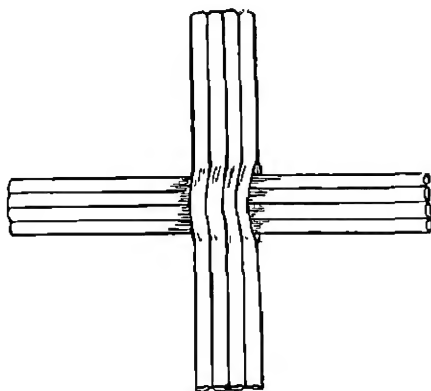
When a join is necessary, leave the old end at the front, then insert the end of the new cane on the left side of the old one. The new end will actually pass under 2 canes (see Fig. 3). Continue with the new weaver. When the mat measures 5 in. across, draw one end under 1 cane of the last row and then draw the other cane under 2 canes one space to the right.

Damp the stakes to prevent breakage and then make a point on the end of each. Insert the end of the first stake down the near side of the third stake, passing in front of the second stake (see Fig. 8). Follow the pattern with each stake

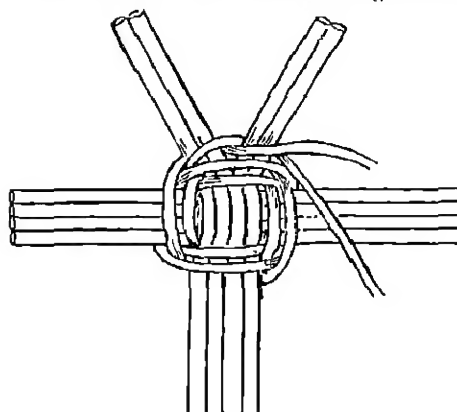
Doll's Gipsy Table

Materials required—

The same as in Round Mat, with the addition of 3 pieces of No. 12 cane, 6 in. long, for legs.



Beginning the Round Mat



Parting the Canes

FIG. 24

A Round Mat

in turn, then level all loops and cut off all ends of the weaving canes. The next step forward is making an easy and simple basket, such as the one shaped like a bird's nest, but the doll's table, an interesting development of the tray, may well be made before this.

Make the top exactly the same as the mat, but finish off the weaving when the work measures $3\frac{1}{2}$ in. across. Cut the stakes $2\frac{1}{2}$ in. long for the border, but before inserting them into the weaving, make a point on each one and dip the points in water. They will then pass down by the side

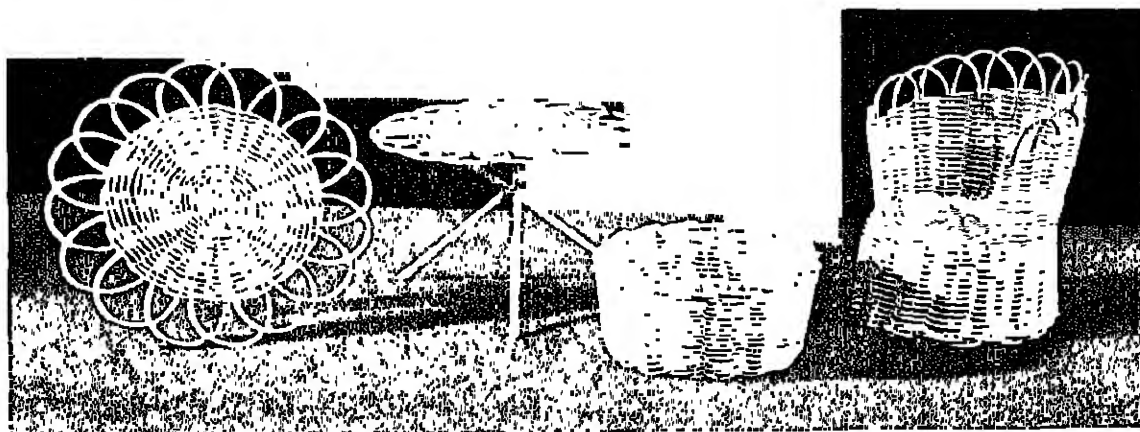


FIG. 25

Showing Development of Doll's Chair and Table from Round Mat and Bird's Nest Basket

more easily when the scallop is being made. Do not make the loops too large. A good result will be obtained if the ends of stakes are pressed well down into the weaving.

To make and fix the legs, first kink or bruise them at one end with pliers, the kink being about $\frac{3}{4}$ in. from the end. Make a point at the kinked end and then clear a passage by the side of a stake with a bodkin, inserting the bodkin between the fourth and fifth rows of weaving from the outer edge. The other legs should be inserted in the same way, all three being equal distances apart. It will be necessary to drive the legs into the top with a hammer, rapping iron, or other suitable tool. Now cross two of the legs and place the third at the side of where the first two cross and not between them. Arrange for the crossing to be about $1\frac{1}{2}$ in. below the table top, then bind them together with a thin strand of natural raffia; or they may be secured with $\frac{1}{4}$ in. fine wire nails. If the table does not stand level, cut sufficient off the longest leg to remove the defect.

Bird's Nest Basket

Materials required—

8 pieces of No. 4 cane, 12 in. long, for stakes.

3 lengths of No. 1 cane for weaving

1 piece of No. 12 cane, 16 in. long, for handle

After making the round plate mat or dolls' table, you will find that it is quite an easy step to make this child's toy basket. Most of the difficulties one meets with in basket-making are avoided in this model, and in view of this it is well to adopt this type of basket as being most suitable for beginners when it is not convenient to use wood bases.

Commence the base as in the mat, and, when the weaving measures 1 in. across, cut off one of the stakes close to the work. You will now have an odd number, and the rest of the weaving can be done with one cane instead of two. The shaping of the basket should now be commenced, and this is to be done with the flat of the hand. As soon as the sides are upright, continue weaving with the basket held upside down. Otherwise it would not stand firmly on the table or workboard. Rand to a depth of 2 in., then finish off the weaving by converting the final row into a row of *pairing*. To do this, weave one

more row but, each time the cane passes behind a stake, draw it through under one cane of the last row. Cut the final end off on the outside of basket. Now sharpen each stake 3 in. above the weaving, and insert the first stake down by the third stake on its near side. Treat all stakes in a similar way and then level the tops of loops. Make a point on each end of handle cane and insert one end down by the side of a stake and the other end by the side of a stake on the opposite side of the basket. To secure the handle, bore a little hole through the handle cane $\frac{1}{2}$ in. below the top of weaving and insert a small piece of cane to act as a peg. Cut off the projecting ends to neaten.

A Doll's Chair

Materials required—

8 pieces of No. 4 cane, 14 in. long, for stakes.

1 piece of No. 4 cane, 5 in. long, for by-stake

11 pieces of No. 4 cane, $7\frac{1}{2}$ in. long, for back stakes.

Few lengths of No. 1 cane for weaving.

2 pieces of No. 10 cane for arm canes.

To the uninitiated, this chair at first sight may appear very difficult to make, but it is merely a simple round-shaped basket turned upside down. The back stakes are then inserted, and upon these the back is woven. First make the seat exactly in the same way as described for the round mat, and when it measures 3 in. across insert the by-stake down the side of any one stake, and continue to weave one more row of pairing, opening out the by-stake to form an odd number of stakes. Now squeeze all stakes close to the line of weaving and bend them to form the skirt of chair. Imagine you are making just a simple basket and continue to weave 3 rows of pairing round the sides of basket. Spread the stakes out a little, so that the top of basket will be a little wider than the base. Now cut off one of the weaving canes and proceed to weave with a single cane, taking it in front of one stake and behind one, and so on for 21 rows. Finish off with 1 row of pairing.

The simple trac border is worked by taking the first stake down behind the second and then in front of the third, leaving the end inside (see Fig. 12). Continue the movements with each stake in turn, and see that the final stake is

drawn through and tucked into its proper place. Turn the basket over. Sharpen the two No. 10 canes and insert them down the side of stakes on opposite sides of the seat, but a little nearer the front and not in a line with the centre. Then, with a bodkin, clear a passage by the side of each stake, and after making a point on the ends of the back stakes, insert them in the clearance made by the side of each stake. The end of stake should reach the foot-ridge, so that

instead of the outside. When reaching the end of alternate rows, take the weaving cane right round the arm cane so that the line of weaving will be kept level. This wrapping round will fully cover the arm canes and will prevent the weaving from becoming loose. Do not forget to keep pressing the stakes outward. Make the joins on the outside of back. When 30 rows have been worked, gradually raise the height of back by turning round one stake less each time you

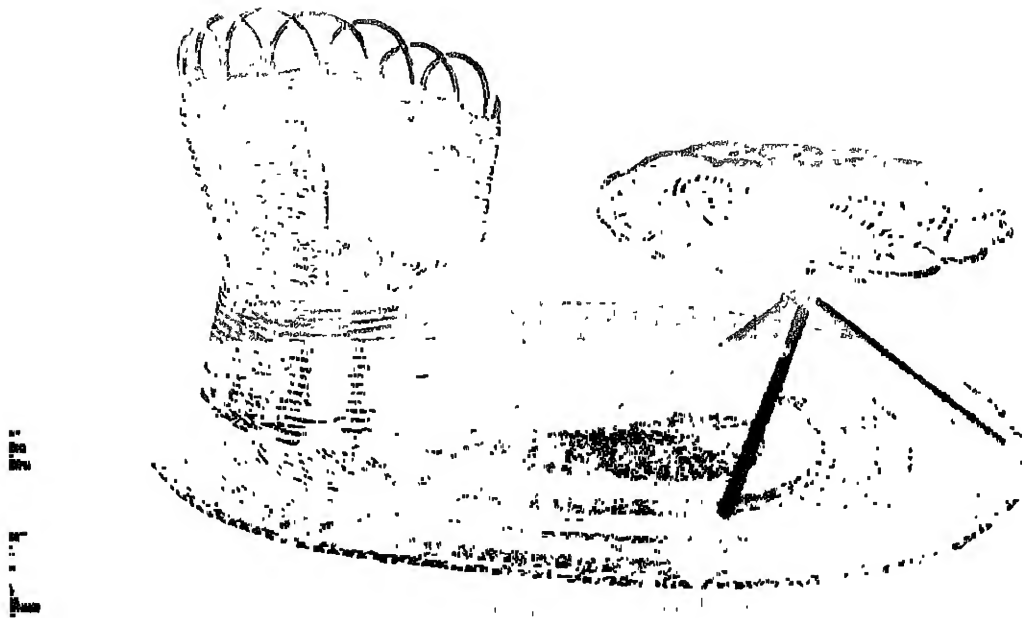


FIG 26

Doll's Chair and Table

the back will be securely attached to the skirt. Where the stakes seem wider apart, add an extra stake to equalize the spaces. Press all the stakes outward so that the back will not be too straight up.

Commence to weave with a single cane of No. 1 size, and when the arm cane is reached bring the weaving cane round it in order to weave the second row from right to left. There really is no need to weave from right to left, if every second row is worked from the inside of chair

reverse. To finish the weaving, kink the weaving cane and make a point $\frac{3}{4}$ in. from the kink, then drive the pointed end down the near side of the centre stake. Insert a piece of No. 4 cane, 3 in. long, down the side of one arm cane with the aid of a bodkin. Now cut all the stakes $\frac{3}{4}$ in. long by sharpening the ends and commence to make a scallop border as shown in Fig. 7. As the border is finished it will be found that there is one stake too many. Cut this off close to the weaving. See that all loops are level.

POTTERY

AMONG the traditional crafts developed by man for his safety and comfort, none is more interesting than the craft of pottery. From the earliest times the urgent need for utensils in which to store water and food was satisfied by using animal skins, gourds, and rough basket vessels. Two types of basketry survived and developed: *the interwoven basket*, where stakes formed the framework and weavers filled in the spaces between, and *the coiled basket*, where bark strips, rushes, or grasses were coiled and sewn together by various stitches. The practice of lining these baskets to make them watertight most probably led to the discovery of the clay pot. It is not unlikely that the ark of bulrushes fashioned for the baby Moses by his Levite mother in ancient Egypt was a coiled basket, lined as we are told with "slime and pitch" to make it watertight.

Certain primitive pots discovered in excavation work show markings which suggest that they were originally made as basket linings, the basket being burned off later in the hardening of the pot by fire. It is interesting to note that in primitive pottery two types mainly were found, the *hand-drawn pot*, where the hands were used to draw out and protect the lump of clay till a hollow vessel resulted, and the *coiled pot*, where clay was rolled into coils and made into a bowl, jug, or plate shape by pressing the coils together and further strengthening the joins with soft clay. In recent films of primitive life in Africa the first method has been seen still employed by native women, who walk round and round the pot working the clay with one hand and protecting it with the other.

Modern factory-made pottery shows traces of his double ancestry. One of the two main types is the *press or slip-mould type*, where a plaster of Paris mould is made on a core, the core being removed and the mould lined with clay. The plaster of Paris absorbs the moisture and the shrinkage of the clay enables the vessel to be removed from the mould, which may be in one or more pieces according to the intricacy of the

pottery shape. The second main type is the wheel-spun pot, with analogous types of plate-spinning on a plaster mould.

Suitable Work for Juniors

In the Junior School the types of pottery best suited to the age and environment of the pupil are the hand-drawn and coiled varieties, with tiles and slab pots as more constructive problems. The making of statuettes and book-ends may be added to the more strictly utilitarian work. If an enthusiastic teacher can set up a treadle wheel so much the better, but the absence of a potter's wheel does not mean that no real pottery can be made.

Tools and Equipment

Undoubtedly the difficulty of using clay in a crowded classroom prevents many teachers from allowing their children to enjoy one of the most delightful of creative experiences. A few practical hints may dispel the fears of the average adult, and make the experiment possible.

In the first place the clay itself should be bought *in a plastic condition*. It is impossible by merely mixing powdered clay with water to get the elasticity and strength so necessary for clay used for pot-making. The clay should preferably be bought from an actual pottery, or brickworks. If it must be requisitioned from a firm of school "outfitters," it may be had in plastic form from several reputable firms at from 10s. to 12s 6d. per cwt.

Clay which arrives in a plastic "block" should be cut up with a wire into easily-handled pieces and stored. A small zinc dustbin, zinc pails, or porcelain crock will do for storage. The vessel should be *rust-proof* and *air-tight*. Cover the clay with a pad of soaking wet cloths. Blanket between cotton layers makes the best cover. Another pail or crock should be kept for re-conditioning used clay. Exercises done by children will not all be kept to dry and finish. Those "discards" should be made up into small balls and thrown into the used-clay pail, where,

covered with soaking cloths, the pieces become impregnated with moisture and regain their elastic qualities. Clay should not be allowed to get quite dry, as the problem of re-conditioning

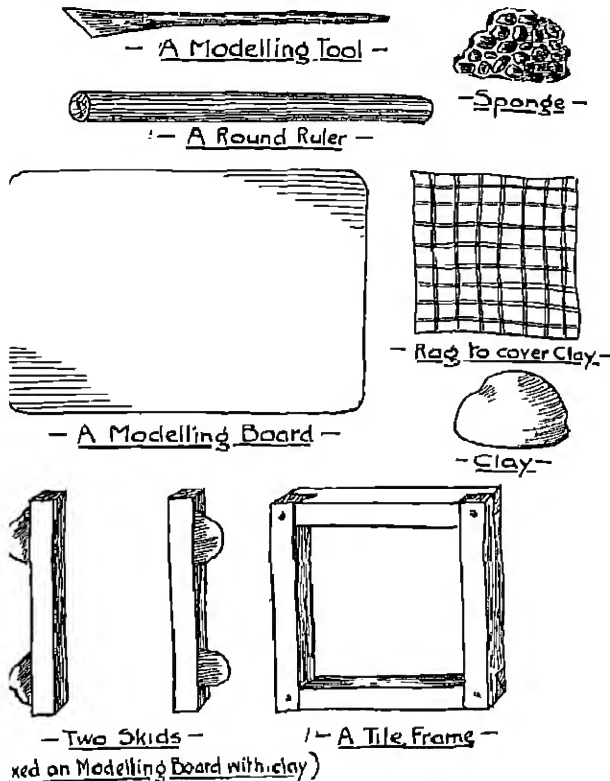


FIG. 1

Equipment for Pottery

is then rather serious and difficult to solve in school.

The classroom equipment should include, plenty of newspapers for covering desks and, if necessary, floors; a modelling board, sponge or wet rag, and a simple modelling tool. Modelling boards must be waterproof. Old slates are excellent, though heavy. Stout oiled mill-

board is sold by educational firms. A square (8 in. side) of cork linoleum makes an excellent modelling board. It is light, firm, and easily stored and washed. A wooden meat skewer makes a good tool. The pointed end gives a boring or lining tool; the other end may be sharpened to a flat chisel edge, for a cutting tool.

Extra equipment of wooden frames or "skids" (slats of wood) may be needed for tile-making and for preparing slabs for slab pots. A wooden roller is useful in the last-named exercise (see Fig. 1).

Firing, Colouring, and Glazing

The difficulty of finishing clay pots in such a way as to make them waterproof and durable prevents many people from taking up pottery as a school craft. This is a great pity, for the educational and æsthetic values of pottery in the Junior School do not depend on adult finish. The joy of creating the object, the romance of the craft learned through practising its early forms, and the knowledge of good design gained are surely ends in themselves. It is possible to finish the pots, tiles, etc., by baking them in a hot oven so that they are thoroughly dried, and painting with poster colours and varnishing, or painting with varnish paint or cellulose-finish paint. Some fairly successful experiments in hardening the clay have been carried out by filling crocks or fire-clay sinks with sand and embedding the clay jars, tiles, etc., therein. The whole is then put in the school furnace and tended by a kindly caretaker. In one or two fortunate cities the Elementary Schools have access to a gas-heated kiln, so that firing and glazing can there be done in the proper way. There are several smaller kilns on the market which might be installed in a school yard or outhouse. Were the demand insistent enough, there is no doubt that kilns would be found!

Meantime, however, it will be seen in the following suggestions that much creative craft work can be done even in existing conditions.

HAND-DRAWN POTTERY

Beginners, of whatever age, would be wise to essay first the making of small bowls, cups, saucers, jugs, ash-trays, candlesticks, etc., by

the following method. Clay for hand-drawn pots should be soft but not sticky, and should, of course, be of uniform consistency. Young potters

will come to appreciate the various states of clay as they practise the craft. For all small pots a piece of clay the size of a small apple is sufficient.

A Bowl

To make a small bowl, form the piece of clay into a rough sphere, then push a finger down into the centre. This hole will be widened until the bowl is of the required size. Insert the thumb of the right hand in the hole, place the fingers on the outside of the ball, and work round, thinning the walls of the clay slightly and enlarging the hole. Now use one hand as the *shaping* tool and one as a *support*, and gradually work the bowl shape from the clay. When working on the inside with the fingers of the right hand, the left should be "cupped" round the outside. When the outside is being smoothed and shaped, the left hand should be inside the bowl. When the form begins to be clear the object should be examined. Common faults which will be found in most beginners' work are—

1. A thin spot in the centre of the base.
2. A thick ridge where the base and sides meet.
3. A thin and broken top edge.

Domestic crockery may here be introduced, when it will be found that the thickness of the walls or sides of the bowl should be uniform; and, as seen in many kitchen basins, the top edge must be at least as thick as, and probably thicker than, the rest of the vessel. If the clay bowl has been covered by a wet rag during this investigation it will be in a fine condition for reshaping to these requirements! If cracks are rubbed away as they appear a leather-like surface can be obtained, and this makes the bowl easy to finish and to draw up to about 2 in. in height, thickness being at least $\frac{1}{8}$ in (see Fig. 2 a).

A Cup

If the obvious and interesting project of making a miniature tea set is followed out—a cup would next claim attention. A smaller bowl shape would be made and the handle discussed. Now the fixing of handles by adding a coil to the vessel requires some skill, so beginners are advised to make a modern type of cup by pulling the handle out from the side

of the dish, smoothing and shaping it, and finally piercing it with the pointed end of the modelling tool (Fig. 2 b).

A Jug

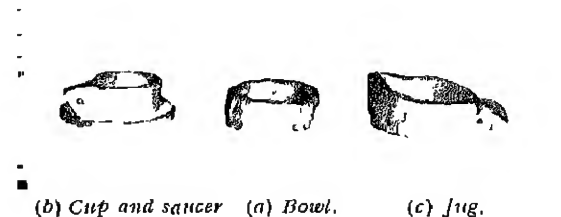
The lip of the jug would be worked with the thumb on the inside and two fingers on the outside. The fingers would be moist, or the clay moistened with a wet rag before working (see Fig. 2 c).

A Saucer

The saucer may be made from a small flattened sphere. Note that in a tea service the relative sizes of the pieces must be observed.

A Teapot

The teapot presents several problems, not the least difficult being the drawing in of the shape



(b) Cup and saucer (a) Bowl. (c) Jug.

FIG. 2

First Exercises in Doll's Dishes

to form the lid aperture. It is best to leave it out of the first set of exercises and try it after various shapes of bowls have been mastered.

Decoration and Finish

A set of small tea things would make a very suitable Christmas gift for small sisters or friends. If the dishes are thoroughly air-dried and then baked in an oven for two hours they are ready to be decorated, *though they will not hold water* by this method of firing, nor can they be glazed. They may be painted all over with varnish paint, or decorated with colour bands or spot patterns in bright poster paints, then coated with clear cellulose lacquer or varnish.

Ashtrays and Bowls

The criticism levelled at this type of pottery-making is that it is uncontrolled and haphazard.

The shape cannot be built to plan. Certainly it seems, at the first few attempts, as if all our bowls become ash-trays! In other words, the dish spreads and height is difficult to attain. By working both hands as suggested, better control comes.

An aid to accurate hand-pulled pottery is as follows. Cut out, on folded paper, a paper shape of the bowl that is to be made. Paste this on a sheet of paper or scrap cardboard and set it up in front of the modelling board. It can be referred to as the work goes on. A second shape, cut in stiff paper, may be used as a test from time to time, while the outline left on the surrounding paper, i.e. the reverse curve of the dish, may be laid against the side of the vessel as a "template."

To shape a dish *outward* the fingers *inside* the bowl should be held at an *obtuse* angle to the arm; to shape it *inward*, at an *acute* angle while the left hand does the shaping, the dish is turned round, or, if possible, the worker moves round the dish.

Incised and Relief Decoration

Small decorative bowls and trays are enhanced by traditional methods of decoration. An indented pattern may be worked in a band round the dish by using stick-ends, or pencil ends, and making depressions on the soft clay, forming a rhythmic border. Similarly, small balls of clay may be pressed into the surface while it

is moist-hard, and so arranged to form a relief decoration (Fig. 3a).

Colouring would then be done and varnishing if necessary, these finishing touches being added



(a) Hand-drawn, decorated with balls of clay
(b) Coiled (c) Jug, showing handle

FIG. 3

Small Decorative Dishes

after the dishes were as dry and as "baked" as circumstances would allow.

Where a kiln can be used, the green (unfired clay) would first be fired. It is then called "biscuit," and may be decorated by glazing with glazes in which colour is mixed with the glaze, or painting with under-glaze colours, burning this in, and dipping in clear glaze and re-firing.

COILED POTTERY

The success of this work depends on two factors, the ability to make even and smooth coils of clay, and the power to visualize good form in a dish or jar. If the coils are well made, the joining and shaping are comparatively simple. Practice in coil making, where necessary, should precede pottery of this type. Start with a sausage-like piece of really soft fresh clay. Holding one end with the left hand against the modelling board, roll and pull with the right, using the palm of the hand. Try to get lengths of pencil type. These may be broken up and formed into beads or marbles, if desired. Later

try rolling and pulling, working *both* hands. Coils for pottery should be about $\frac{1}{4}$ in. in diameter and 8 in. or 9 in. long. As each length of coil is made, lay it in a wet cloth to keep moist. Do not bruise the shape.

A Plate

To make a simple plate (or teapot-stand if heavier coil is used) in coiled pottery, cut a circle of the desired size from a piece of waste paper, lay it on the modelling board, and, starting from the centre, using a moistened coil, work

the clay round in a snake-like formation till the base is covered, pressing each coil closely to the last. Should it be necessary to *join one coil to another*, taper off the end and the beginning so as to get a spliced effect, moisten both joining points with water and press together. On the outside as the last coil is coming to an end, taper it gradually, so that it merges into the circumference showing no obtruding point.

Now comes the business of smoothing and making quite secure the joins of the coils. In domestic utensils the inside of the vessel should be smooth and unridged for the sake of cleanliness. The method found most satisfactory is to roughen up the hollows between the coils with a pencil or modelling-tool point, then to fill the hollows with clay "slip," i.e. clay thinned down with water to the consistency of "double" cream. A jug of slip should be prepared beforehand and tin lids or other receptacles used by groups of children. If brushes are not to be had, the slip may be "spread" with a flat-pointed modelling tool, or with a folded spill of paper. When the slip has hardened somewhat, the surface of the plate or teapot-stand may be smoothed with the finger.

Bowl and Jug

When bowls, jugs, etc., are made in coiled pottery, *the base is first finished* in the above manner, before the sides are coiled.

One of the advantages of the coiled pot is that it can be shaped by degrees, and each part of the height consolidated. This allows of more generous curves, and also of greater height. A hand-drawn pot cannot comfortably be drawn to a greater height than the distance from the potter's first finger to his thumb joint.

To coil the sides of a bowl or jug, begin with a tapering coil and lay it on top of the outside coil of the base, pressing firmly. Then continue to work up the sides of the dish, joining, where necessary, as before. At intervals, before the clay hardens, rough-up the hollows *on the inside* of the jug and fill with slip, smoothing as before. This will leave the beauty of the outside coils unimpaired. They form a decoration in themselves and need little or no embellishment (Fig. 3 b).

Jug handles should now be made from twisted or plaited coil. Many fine effects can be obtained in this way, by continuing the top coil to form the handle (Fig. 3 c).

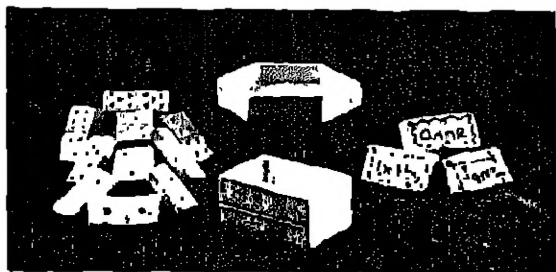
TILES AND SLAB POTS

This branch of pottery, involving as it does more definitely constructive methods, might very well accompany both types of pottery already described. In the earlier stages dominoes, small name-slabs, and tiles might be made, while later slab pots, based on oblongs, hexagons, etc.,

could be tried. Teachers of boys in the upper classes of the Junior School will find in slab pottery an outlet for constructive work in paper and cardboard, involving geometrical drawing.

Extra equipment is necessary for the making of tiles, and for the preparation of flat "slabs" of clay. Wooden tile frames, square and oblong, may be made in a handicraft room from slats of wood $\frac{1}{2}$ in. deep, 1 in. wide, and, say, 4 in. to 6 in. long. A halving joint will make a strong frame. For pieces of slab which will afterwards be cut to desired shapes, wooden laths of varying lengths and from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. thick should be obtained. Three of these are used in making one slab, or two and a piece of round wood (a cut broom handle length will do).

The clay used for slabs should be stiffer than for pottery. In fact, used clay re-conditioned to a stiff consistency makes good tiles.



(a) Dominoes (b) Slab pots. (c) Name-blocks.

FIG. 4

Slab Work

Tiles

To fill a tile-frame, one should press pieces of clay firmly into the frame, filling first along the four inside edges, then pressing pieces into the centre. A straight-edged "skid" (lath) is used to smooth the top, using the narrow edge down. Fill up hollows, and smooth till quite flat.

Applied design may be practised on the tile, connecting up with art work.

(a) A folded square cut-out to give a symmetrical pattern may be laid on the tile and certain parts lined on to the tile to give an incised pattern.

(b) The skid being used as a ruler, lined designs built up from diametric and diagonal division may afterwards have parts scraped away or "matted" with the point of a modelling tool.

(c) Pictorial tiles may be made by tracing an outline of bird, animal, ship, etc., and scraping away a shallow layer of the background within a marginal frame, so that the object has the effect of slight relief.

Coloured Tiles

The drying of tiles is a problem. They are best stacked in a cool airy place, and when half dried turned over to prevent "buckling" of edges. When thoroughly dried they may be hardened by one or other of the methods described previously, then painted with poster colours, and lacquered. A heat-proof lacquer on a thoroughly dry tile will give it a short life as a teapot-stand. Kiln firing is, of course, necessary for real durability (Fig. 6).

Name-blocks and Dominoes

An interesting and amusing exercise with a slab of clay is to cut it up in oblongs, using a skid as a measuring rod, and use these oblongs as dominoes or as little decorative name-plates. The dominoes may be a Christmas gift to the baby class,

where they will be welcome as number material. The "name-tiles," decorated with incised border patterns and coloured as desired, may usefully be employed in classroom activities to show merit or team leaders, or in other ways.

Slab Box

The familiar oblong box form is the best problem to tackle for a first exercise in slab pottery. The best way to study the box formation is to bring to the classroom a small box (a match-box would do) and cut it down at the four corners,

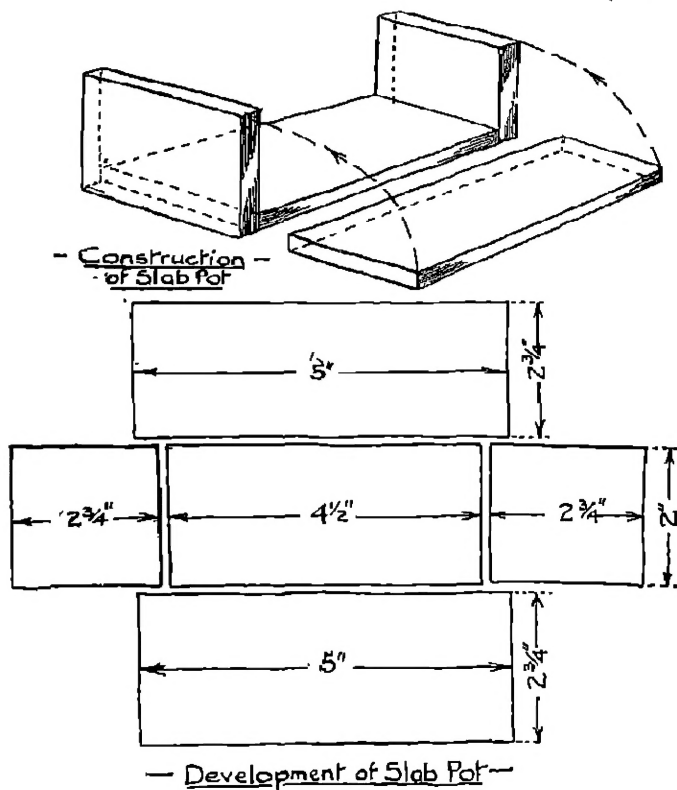


FIG. 5

Outside measurement of finished box 5 in. \times 3 in. \times 2 1/2 in. Thickness of slab 1/2 in.

To make up box moisten edges to be joined, with slip or water. Clay should be leather-hard.

Strengthen inside joins with thin roll or "fillet" of clay moistened and rubbed into position, so that the inside corners are rounded. When box is "set," outside corners and top edges should be rounded with a moistened finger or the flat of a modelling tool. Sharp edges do not hold colour, and are unsightly in a pottery jar.

An interesting development of the oblong box will be found in a cream-cheese dish, which is box and tile (base) combined.

so that it can be laid out as a plan, showing base oblong with four oblong sides. If this is laid on a prepared slab of clay and the shape cut out, the match-box lifted away, and the surplus clay removed, it will be found that the clay box-plan presents some difficulties. In the thick slab—at least $\frac{1}{2}$ in. thick—the turning up of the sides presents a problem which is best solved by separating the four side oblongs completely from the base. The chisel edge of the modelling tool is used for all this straight-line cutting of clay slabs, working against a wooden straight edge.

To build up the box, the four side pieces must be laid against the base edges. It will then be found—

(a) That the sides or ends are too short to allow for the thickness of the slab and the corners therefore do not meet.

(b) The height of the box is reduced by the thickness of the slab.

From this experiment it will be seen that certain contingencies must be allowed for in preparing a paper plan for a slab box. Fig. 5 shows such a plan.

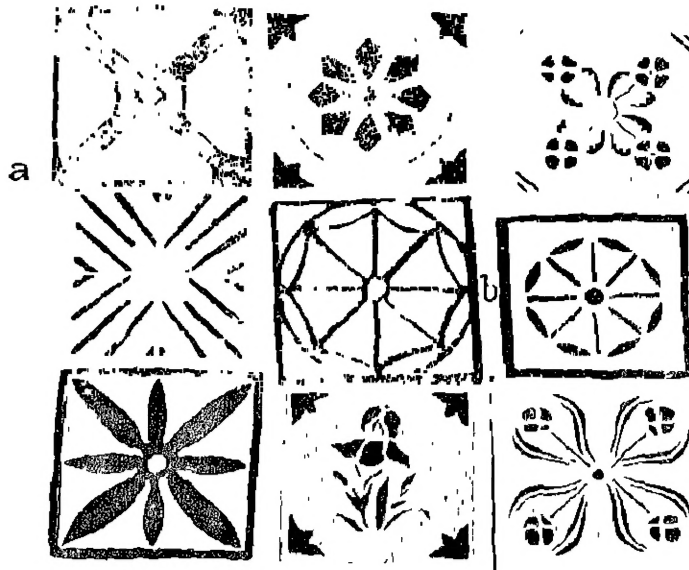


FIG. 6

Slab Tiles

Designed and painted by children. a, b, and centre tile inlaid



FIG. 7

Statuettes in Red Clay. Oven-dried

~~These and similar statuettes may be~~ adapted to useful book-ends (2 slabs, joined at right angles).

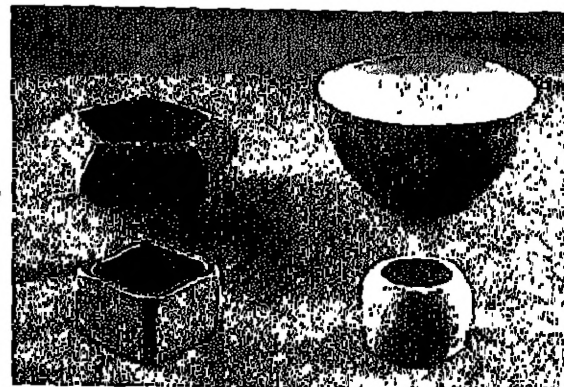


FIG. 8

Finished Pottery

(a) Slab pots. (b) Hand-drawn pot. (c) One-piece mould bowl.

